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ART. I. *Reflections on Diseases of Irritation* By JAMES FOUNTAIN, M. D. Fellow of the College of Physicians and Surgeons of the University of the State of New-York.

"In respect to diseases, there is every reason to believe that their causes operate primarily on the nervous or sentient system of our frame, and secondarily on the vascular system."—*Johnson's Treat.* p. 166.

No COUNTRY on earth, perhaps, presents greater or more sudden vicissitudes of weather than the United States. We often retire with an atmosphere of 45° of Fahrenheit, and in the morning find the quicksilver at 20° or lower, sometimes even below Zero. This rapid change of temperature, together with the humidity arising from our proximity to nearly two thousand miles of sea-board, must necessarily render inflammation the most prominent feature in the catalogue of our morbid affections. Hence this state of the system occupies the greatest portion of the attention of physicians, who being, like other men, creatures of habit, and like them, also subject to indolence, are led insensibly to view every disturbance of the vascular system as the effect of inflammation. The consequence is, as might be anticipated, frequent errors are committed in mistaking diseases of irritation for those of an inflammatory character. To obviate, in some measure, this tendency, and to invite medical men to attempt a discrimina-

tion between *irritative* and *inflammatory* diseases, is the object of this paper. To facilitate the investigation, it will be necessary, previous to entering on the subject of irritative diseases, to premise a few observations on the pathology of inflammation.

Every movement in the living body, whether sensible or insensible, is the effect of an agent acting on the vitality of the moving fibre. As there is no effect without a cause, so there is no action in the living system which does not necessarily presuppose an agent and a vital principle. In health, all the multiform actions are harmoniously produced by their appropriate agents acting on the various modifications of vitality. Health, therefore, consists in the due application of these agents, and a consequent responsive action adequate to the regular performance of the various functions of the body. When the power of the agent is increased, the living principle remaining the same, a greater movement must ensue; or, the living principle being exalted, and the agent remaining the same, a similar elevation of movement must arise. Hence, when an increased action is manifest in a part, or the whole of the living body, it follows that there must be an augmentation either of the force of the agent or of the vital principle, or of both. Either of these states may obtain to a certain point, and yet the health remain unaffected; but if carried beyond that point, the functions become deranged, and disease is induced.

All agents capable of producing an accelerated movement, or simply an elevation of *natural action*, must be called strictly *stimulants*, or excitants, and their effect *excitement*. This excitement also, to a certain point of elevation, is consistent with health; but above that point, by deranging the functions of the part affected, it becomes morbid, constituting inflammation. "This," says Richerand, "may, I believe, be defined an increase of the vital properties in the part which it affects." This has been the fundamental doctrine of inflammation, entertained from time immemorial by all medical authors, with the exception of Messrs. Allen, Phillips, Parr, Thomson, and Hastings. "Yet," says Dr. Bostock, "it ap-

pears to me that both the exciting causes of this affection and the treatment, coincide more with the idea of excessive than of defective action." By others, however, especially Doctors Burns and Copland, the action is considered not only increased in degree, but changed in kind. This modification of the doctrine has been evidently admitted for the purpose of comprising venereal, erysipelatous, and other actions, called by Dr. Burns specific, and by Dr. Cooper, morbid inflammations—all of which may be disposed of elsewhere. Simple inflammation, then, the healthy inflammation of Cooper, may be defined *a morbidly excited or exalted condition of all the parts concerned.*

As a proof that inflammation consists of increased action only, I shall adduce one example as sufficient; and the most familiar and unequivocal one is, the effect produced by the application of caloric to the living body. Here the gradual augmentation of the quantity of the agent will produce a corresponding elevation of action, until all the phenomena of inflammation are developed, without the least evidence of change in kind of action, more than what arises from excess. Its effects, however, tumefaction, effusion, suppuration, &c., must not be confounded with its essence. The want of discrimination between cause and effect, has ever been a stumbling-block to pathologists, and led to innumerable fallacies.

That the essence of inflammation is merely exalted action, derives additional support from the nature of the remedies, which even Burns, with all his ideas of changed action, recommends. "The general remedies," he observes, "are naturally such as tend to abate action in general, or to diminish the natural, and therefore will consist of bleeding, cold, purging, &c." But when he comes to the local treatment, he recommends "such articles as tend to excite, to a certain degree, a specific change of action." The remedies which he introduces to effect this change, however, resolve themselves readily into such as tend either to diminish morbidly excited action, or to remove its effects.

Inflammation varies not only in degree, according to the intensity of the exciting cause and the grade of predisposition,

but in character, according to the structure of the part affected, as the membranous, parenchymatous, mucous, &c. What is termed passive, or chronic inflammation, by authors, is either the subacute state, or merely the effect of a less excessive action.

When the exciting causes of inflammation are applied to the system generally, a universal excitement prevails, constituting synocha. Provided the system is properly balanced, a uniform fever ensues; but if a part be predisposed, this assumes a still higher action, proportionate to the grade of predisposition, and thus a local effect is developed. The superior sensibility of the part thus affected, is still farther augmented; parts with which it naturally associates sympathise, and, growing in importance, the whole system is finally brought under its influence, and from an effect it becomes a cause, and a symptomatic fever is the result, modifying the original movement. As there are few persons, the energies of whose systems are properly balanced, so there are few inflammatory fevers uninfluenced by local determinations.

Having considered morbidly excited action arising from an increased application of the agent only, I would just repeat that the same effect, *cæteris paribus*, may result from an augmented aptitude, or exalted condition of the whole or a part of the system. Every person must unquestionably have experienced, at some time or another, a violent and almost instantaneous *gust* of pulsation, not only of the heart, but of the whole arterial system. This must incontestably arise from the sudden emanation of sensorial power with electric-like velocity. Numerous instances might be adduced of fevers and inflammations arising from excessive joy, where predisposition existed. Moreover, predisposition itself is nothing more than this elevated state of vitality, or increased susceptibility of impression in a part or the whole of the body, consequent to debility; for it appears to be a law of the animal economy, that nervous irritability, the *latent organic sensibility* of a part, is in an inverse ratio with its tonicity or vigour, or in exact proportion to its debility. In parts thus circumstanced, inflammation is more readily excited, for two very good reasons:

first, vitality, or aptitude to impression, being more exalted, an increased action is thereby more easily induced; second, a less degree of action becomes morbid, being sufficient to derange the functions of the debilitated part, constituting inflammation. "We may, therefore," says Mr. Abernethy, "account rationally, and in conformity to acknowledged facts, for the production of diseases in vital organs, by supposing, that a state of general weakness and irritability being induced, the naturally weak parts suffer in the greatest degree, and *in consequence* they most readily become the subjects of disease." According to this view of the subject, the general disorder of the system becomes the exciting cause of the local disease, and must of necessity precede it. This is corroborated by daily experience; for in pneumonia, pleuritis, &c., the general system is disturbed by rigors, and wandering pains, for hours, and sometimes days, before the local affection is developed. "In our present state of knowledge, therefore," observes the same author, "I think it better to consider the disturbance of the system in general, as merely the exciting cause of local disease."

I am aware that this view is not in exact accordance with the doctrine of Dr. James Johnson. His five sympathies suffice, in his opinion, to account for the production of all internal inflammations from external causes: but he might have availed himself of as many more; for cold will produce not only his cutaneo-pulmonic, cutaneo-gastric, cutaneo-enteric, cutaneo-renal, and cutaneo-hepatic affections, but quite as often tooth-ache, ear-ache, rheumatism, &c., forming cutaneo-odontic, auric, arthritic, &c. Now all, or some one of these effects, ought to arise from every severe application of cold, and yet people are often frozen almost to total insensibility, and no disease results. We must, then, of course, resort to the aid of predisposition; and to suppose the skin to sympathise with the predisposed in preference to a sound part, is to render the laws of sympathy wholly fortuitous. The fact is, every organ possesses, besides its own peculiarly modified vitality, a living principle in common with every other part. This property resident in the nervous tissue, the connecting medium of the

whole system, receives all impressions, which are conveyed in a greater or less degree to every part of the system, and a local or general, or no disease, is produced, as a part or whole of the system is predisposed or otherwise.

Having taken a cursory view of morbid excitation, or inflammation, properly so called, I shall revert to *original* action, and take a general survey of those movements which are justly said to be changed in kind. Of these, some are increased and some reduced in degree, according to the state of their vitality, and the nature of the exciting causes; and yet all are *modified in kind.* These constitute the poisons, the "morbid" and "specific" inflammations of authors, and many other affections located by them in the former class. There are similar affections of the nervous system exclusively, in which vascular action does not necessarily participate; to all of which I propose to restrict the term *irritation.* The agents capable of producing this perturbed movement, are the true *irritants,* and cannot, in strict conformity to pathological language, be called stimulants.

Irritation may be divided into *organic* or *structural,* and *nervous.* The structural, involving both the vascular and organic nervous tissue of the part affected, has its seat, as well as inflammation proper, according to Dr. Copland, in the ganglial, or organic system of nerves only; or those, to which are entrusted the development and support of every part of the system, of which the great sympathetics are the centre. *Nervous* irritation, on the contrary, is confined to the sentient, or cerebro-spinal system of nerves, or those adapted purely to sensation and voluntary motion.

Dr. Brown, in his Elements, admits that there is an action differing from excitement or the abstraction of stimulus; and to this state he applies the term irritation, and denominates all substances capable of producing it, *irritants:* yet other writers, equally distinguished for sagacity and depth of penetration, make irritation a class, and rank under it diseases of the whole system, which they denominate "affections universally local"—that is, local actions produced in every moving fibre, by the direct application of the irritating cause. Not having

access to the writings of the Italians, I am unable to quote their own words; yet it appears, according to them, as it must to every reflecting mind, that there exist between agents and vitality certain relations; so that some substances are congenial to the vital laws producing regular excitement, or simply an elevated condition of the part to which they are applied; whilst others are repugnant or non-conformable to those laws, producing a disturbance, or movement of disgust or disorder, differing essentially from that of regular excitement. This last set are the irritants, and their effect is *irritation*.

Organic Irritation.

What particularly distinguishes this state is, that it is incapable of being subdued, either by the addition or abstraction of stimuli; for whether the movement be elevated or depressed, it remains the same action still, differing only in intensity. Dr. Johnson, in the Medico-Chirurgical Review, admits of a class of diseases of irritation, whose characteristic is the peculiarity of being irremediable, either by stimulation or depletion.

Tommasini and others, however, deny the existence of a diathesis of irritation, or irritative diseases independent of the presence of the irritating cause. This opinion, I would humbly observe, must have resulted either from inattention or inexperience. I have known a most violent erysipelatous affection, originating from the application of a plaster of Burgundy pitch, to spread from the seat of its location over the whole body, and continue ten days after the removal of the plaster. I have seen similar universal affections induced by the application of gum galbanum, and a variety of terebinthinates.

The only irritative disease I shall adduce at present, illustrative of changed action, is that developed by the application of the poison of the different species of the *Rhus*. This disease, so familiar to country practitioners, like every other erysipelatous action, has ever been treated in a most unsettled and desultory manner. Hot and cold, wet and dry, stimulating and sedative applications, have been severally recommended, and found support even amongst the ablest writers. This contra-

dictory treatment is a sufficient proof of the want of just pathological principles. Did this disease consist in inflammation only, bleeding, cold and saturnine applications, would inevitably and speedily remove it; on the contrary, did it consist of deficiency of action, stimulants would as readily answer the same end; neither of which is the fact, though both plans are occasionally useful as *adjuvants*. This subject, however, will be resumed another time.

Besides the trait of being irremediable by stimulation or depletion, irritative diseases evince another peculiarity, that of being frequently continued from habit. This arises most probably from their implicating, in a special manner, the nervous system, on which habit solely depends. Mr. Abernethy, in allusion to cancer, observes: "Local diseases, however induced, may become established by habit, or continued from that state of disorder into which they have reduced the part that they have attacked." Not only local, but some general diseases, we shall subsequently find, are similarly influenced. As there are local and general inflammatory actions, so there are *limited* and *universal* irritations, both governed by the same laws, and acting on the same principles.

Causes of Irritative Diseases.

The causes of irritative diseases naturally divide themselves into predisposing and exciting. Dr. Johnson seems to question the strict propriety of this division; and in support of his opinion, he offers an example, the fallacy of which will be proved by another example, under the head of *Intermittent Fever*. Predisposition does not necessarily precede the exciting cause. The *præ* renders it antecedent, not to a thing, but to a state, *disposition*, or *disease*. Hence predisposing causes of most diseases, are such as induce a susceptibility to impression, or disposition of body to be acted upon by the exciting causes, whilst these directly call up or induce that particular movement which constitutes the disease. The exciting causes of irritative diseases, are *agents* either applied or introduced into the body, where they may, and often do, continue and circulate an indefinite length of time, until a predis-

position is by some means induced, when they suddenly produce their effect.

As the healthy is opposed to changed action, it follows, that whatever impairs the former, must favour the evolution of the latter. Hence the predisposing causes must comprise whatever tends to derange the healthy order of movement, or interrupt, in any manner, the regular performance of the functions of the body. The exciting causes comprehend all such agents as are in any way applied to the living body, either directly, or through the medium of circulation, having a tendency to produce that peculiarly modified action constituting irritation. The exciting causes are sometimes so intense, as to produce disease in every person with whom they come in contact, but in general they do not; which clearly indicates, in such cases, the necessity of predisposition.

Therapeia of Organic Irritative Diseases.

When called to the bed-side of the sick, every practitioner is led, in all cases, to examine the pulse. Finding arterial action at variance with the healthy standard, the first question which demands his attention is, whether the deviation be the effect of irritation or of inflammation. If the pulse be moderately accelerated, firm, hard, and regularly resisting, an inflammation may be reasonably presumed to exist. If, on the contrary, the pulse be full, soft, and quick, with a confused or hurried beat, resembling that produced by a gust of passion or an affright, we may suspect some considerable irritation to be present. As with inflammation, so with irritation: if the affection be slight, or just emerging, the pulse will be little or not at all affected. In such cases, we shall find the morbific agent to be of an inferior grade, or acting on a limited part only. If the affection be external, the redness and swelling will be more diffused, and irregularly circumscribed; there will be a burning, smarting, and itching sensation confusedly blended together. From such a combination of symptoms, no one would hesitate to pronounce the action to be that of irritation. Having determined the nature of the movement, the next object is to ascertain whether, in addition to the mo-

dified action, the vitality be above or below the medium standard. These three states,—the superior, the medium, and the inferior grades,—depend on the predisposition of the subject, and the quality of the exciting cause; consequently they can be ascertained only by a knowledge of the age, temperament, &c. of the patient, and of the nature of the agent.

As there is frequently an elevated or depressed vitality accompanying irritative action, so the remedies naturally divide themselves into such as regulate vitality, and such as correct modified action. The first are merely *adjuvant;* the second only can be called strictly curative. The term *cure* is often misapplied. Medical men speak of curing patients, when, in fact, they only permit them to get well, or to say the most, facilitate recovery by removing obstructions. This is more especially true of irritative diseases; the susceptibility to the action of almost all agents diminishing with the continuance of their application, they finally cease to produce any effect; the changed gives place to the natural action, and health ensues: hence so many frivolous remedies have been introduced for the cure of poisons.

Adjuvant Remedies.—These are such as reduce exalted or support enfeebled vitality, or remove concurrent causes of irritation. These measures are often themselves sufficient to afford relief, the natural power of the system being thereby enabled to triumph over changed action.

Curative Remedies.—These are such as induce a new irritative action more powerful than that which constitutes the disease; and, at the same time, more under our control, and consequently less dangerous. The means for accomplishing this end are the proper counter-irritants, and they should be administered in such a manner as to raise the new irritation as soon as is safe, before the susceptibility to their action is worn out. If the article we wish to employ possesses a power inferior to that constituting the disease, it will only aggravate the original action by adding another irritation to the one already existing. It therefore becomes an imperious duty of the practitioner to ascertain by careful reflection whether he is able safely to raise an irritation more powerful than

that which he is endeavouring to remove. If not, he must decline the attempt, and adopt the palliative plan.

The method of cure by counter-irritation is strictly only substituting one disease for another; it is, however, when properly conducted, instituting a lesser for a greater evil; and skilfully managed, it affords a handsome specimen of medical power.

Nervous Irritative Diseases.

Pathology.—The writers on irritation alluded to, restrict their observations to structural irritation, wholly overlooking those which are confined to the nerves. They speak of irritation of extraneous substances thrust into the body, mechanical lesions, &c. without discriminating between those irritations which are primarily purely nervous, and those resulting from the introduction or application of poisons, which mostly involve the whole structure of the part. In proof that the nerves alone admit of various actions, it will be sufficient to advert to the writings of Darwin, Richerand, Majendie, &c. "It is undoubtedly," observes Richerand, "by a motion of some sort, the nerves act. Setting out from this simple idea, one may admit several *kinds* of nervous motion." And M. Majendie, speaking of the passions, observes, "they result from the *action* of the nervous system." Every one will readily recognise the difference of sensation between that agreeable thrill which pervades the system, on the reception of good news, or the enjoyment of pleasurable emotions, and that horror or rigor which is called forth by intelligence of an unwelcome or portentous nature, by disgusting company, or painful reflections.

As the nerves are the recipients of all impressions, so they are the only parts affected primarily, and sometimes even at all. The first painful sensation of foreign bodies, as splinters thrust into the body, is purely nervous. The irritation of a diseased liver produces frequently a violent pain in the shoulder, arms, fingers, face, eyes, and even the tip of the nose. Now it must be evident to the most superficial observer, that

these affections are originally unattended by any structural derangement. They have a constant tendency to produce organic derangement, and finally to develop inflammation in the part. Tommasini observes, "every diathesic process which can succeed to irritation, will be of the phlogistic character." Dr. Phillip also observes, "many facts point out that long-continued nervous irritation at length terminates in inflammation of the organ affected. Even an affection which in the first instance is wholly sympathetic, arising from irritation applied to a distant part, will, if severe, or long continued, terminate in inflammation of the part sympathetically affected." "The seats of these sympathetic irritations," says Broussais, "are also suddenly transferred from point to point; and, what is of still more importance, the irritations are liable to be suddenly converted into unequivocal inflammations." The pain arising from nervous irritation, and that resulting from inflammation, are as unlike in sensation as are the states of the parts by which they are induced.

The inflammation consequent to nervous irritation being purely an effect, must be proportionate, in a great degree, to the intensity or duration of its cause. In therapeia this is an important point to be kept in view, and will be subsequently illustrated in treating of irritative diseases in detail.

Therapeia of Nervous Irritative Diseases.

Nervous diseases are either relieved, or materially modified, by the inflammation or organic derangement consequent to such a state. The pain of a splinter thrust under the nail, or from punctured and other wounds, is either wholly relieved or greatly modified by the subsequent vascular action thereby induced. Nervous irritations, symptomatic of internal organic derangement, are also relieved, or materially changed, when inflammation is induced in the part sympathetically affected A new train of actions ensues; the nervous is converted into organic derangement, and a new sensation is the result.

In sympathetic affections, the development of organic derangements in the part, acts as a counter-irritant, and thus tends to relieve the original affection; as Dr. Phillips observes, "in proportion as the secondary affection begins to be changed into actual disease of the part affected, it tends to relieve the disease from which it sprung." Thus, when sympathetic affections of the liver or lungs are converted into actual pneumonia, or rheumatism, they are relieved.

In the treatment of all diseases, the first grand object is, if possible, to remove the exciting causes when they continue to operate. Therefore, in all sympathetic irritations, our main indication is to remove the original affection by means best adapted to the different internal disorders.

In primary nervous irritations our object is to attempt their direct removal, whereby we prevent or moderate the subsequent inflammation. The indication for accomplishing this object is to raise the action of the vascular system of the parts concerned, until it is sufficient to induce a change in the state of the nerves capable of supplanting the morbid process, or to create a new action in the nerves adequate to the same end. The former is to be effected by stimulants and tonics, and the latter by irritants. The adjuvant plan consists in reducing directly the nervous irritability by narcotics, and keeping it down until the natural action of the vascular system shall be able to overcome the nervous irritation.

I am not unaware that excessive vascular action is productive of spasmodic actions, evinced by subsultus tendinum, convulsions, &c.; but it is by no means ascertained whether or not these phenomena arise from the action of the vessels on the nerves themselves, or on the cerebrum and spinal cord. When we reflect on the extreme delicacy of the brain; also, that circumscribed inflammations, how severe soever they may be, never induce those irritations until the *whole* vascular system is affected, we may reasonably adopt the latter opinion. Convulsions, and all cerebro-spinal irritations, not being functional derangements of the nerves only, form no objection to my plan of treatment,

which is limited to a disordered state of the functions of the nerves, originating from the various modifications of the sensibility of the nervous matter. I cannot but believe that the medulla of the brain is also liable to the same morbid action. In typhus, and many other states, there are evident manifestations of perverted action, admitting relief from stimuli and irritants. C. H. of Putnam, had been many years delirious; having accidently the small-pox, he barely escaped with his life, but was perfectly relieved of his insanity, and remained mentally sound to good old age. Many instances more might be adduced of the practicability of overcoming even cerebral irritations by vascular action.

Having glanced over the most prominent doctrines of irritative diseases, I shall now consider a few of them individually, confining myself to such *only* as have fallen under my *own* observation and management.

First.—*Diseases of Nervous Irritation Wounds.*

In wounds of every description, vascular action is neither increased, diminished, nor changed primarily by the solution of continuity. Although the vitality of the extremities of the divided vessels be sometimes utterly destroyed, as in gunshot wounds, yet the action of that portion of the vessel contiguous to the disorganized part is unaffected; consequently the irritation, or first painful sensation, must result from the violence done the nerves only. "Thus," says Broussais, "irritation is the parent, or first step to inflammation." The promptitude, the intensity, and the length of the irritation, depend on the organization of the part affected, and the nature of the wound. In wounds of muscular, and all parts possessed of great vascularity and a high degree of vitality, the action of the arteries will soon be roused, and quickly overcome the nervous irritation, which must, under such circumstances, be of short duration and inferior grade. But in wounds of membranous, ligamentous, and all other parts sparingly supplied with vessels, and feebly endowed with vitality, as the joints, in particular, a long period must elapse before vascular action will be sufficiently elevated to supplant

or modify the nervous irritation, whose augmentation being progressive, must necessarily amount to a high degree.

The nature of the wound also materially influences its subsequent condition. When it is inflicted with a sharp instrument, the nervous fibrillæ being merely divided, little violence is done to the organization of the parts, consequently the irritation and vascular action are sooner evolved. In gun-shot wounds, on the contrary, the vitality of the part acted upon is totally destroyed, no pain is at first experienced, and its absence always proportionate to the length of time requisite for the development of arterial action. In lacerated and contused wounds, the excessive pain arises from the violence of rending or bruising the nerves without destroying their vitality.

Cure. Inflammation being always subsequent to, and in exact ratio to the intensity and length of nervous irritation, will warrant the conclusion that the latter is the cause of the former—consequently, in proportion as we counteract the one we prevent the other; and this I shall now show to be in accordance with every day's experience, and to lead to the only proper plan of treatment.

In a curative point of view, all wounds may be divided into three stages, viz. the *irritative*, the *inflammatory*, and the *suppurative*. The second is consecutive to the first, and the third to the second; therefore the last two may be moderated, or totally prevented, by obviating the *first*.

The indication of cure in the first, or irritative stage, to which I am limited, is, as formerly observed, "*to raise the action of the vascular system of the parts concerned, sufficiently to induce a change in the nerves capable of supplanting the morbid process.* The sooner and the more effectually this is accomplished, the less, in every instance, will be the subsequent inflammation. The means used to excite vascular action, and thus to fulfil the indication, consist of stimuli variously applied. The most common of these are diluted alcohol, or common spirit and caloric. Wounds of every description cannot be kept too warm in this stage. When any application can be made to the divided surfaces, the parts should be immediately and thoroughly wetted with ordinary

spirit, previous to dressing. One application and a subsequent warm dressing to incised wounds in vascular parts, will keep up a sufficient action; but in parts less vascular, even incised wounds require more stimulation, and it is necessary to keep them constantly wetted with warm spirit several days in succession. In all capital operations, instead of warm water alone, spirit and water should be used for washing, and the parts should be well enveloped in flannel *until* arterial action is fully evolved: but punctured, contused, and lacerated wounds, demand still more imperiously the constant and unremitting stimulation, either of spirit, or caloric, or of both conjoined. It is an egregious mistake to suppose that all lacerated wounds must necessarily suppurate, as I can truly testify. Mrs. L. had the back of her hand struck by the blunt edge of one of the timbers in a piece of machinery, which tore up and reflected back a triangular patch of skin, the base of which extended quite across the wrist, the apex reaching the first joint of the middle-finger. The skin was replaced, and secured by adhesive plaster, and the whole covered by a thick pad of cotton, and loosely bandaged. The hand thus dressed, was kept constantly wet with warm proof-spirit, and the dressing was permitted to remain on until the tenth day, when it came off, leaving the wound completely healed, tumefaction nor suppuration having ensued.

Curative means are too often inadvertently resorted to instead of preventives, under the preposterous idea of counteracting a condition which does not in reality exist. Thus to prevent inflammation, wounds are sometimes dressed lightly, or subjected to cold sedative washes, or suffered to remain long exposed to the cold air: the action of the vessels being kept down, the irritative stage is thereby prolonged, and a most violent inflammation is the effect of such a blunder. Parts so circumstanced, are justly said to have taken cold. Hence the rationale of Latta's observation, that "even in this climate, wounds are attended with less topical inflammation in summer than in winter."

In punctured and gun-shot wounds, it is often impossible to apply stimulants directly to the divided surfaces; consequently

in all such cases we must trust to caloric alone; and this may be communicated by stupes, fomentations, or poultices. These, the choice of which will depend on circumstances, should be unremittingly applied until inflammation be wholly prevented, as it may be in most punctured wounds, or suppuration established, where that process is inevitable. It is a matter of little moment of what materials these consist, provided they are unirritating, and well charged with caloric. By this plan, excessive inflammation, with all its train of evils, may be averted.

Tetanus.

Although the manifestations of tetanus are confined to the muscular system, yet it is a point on which all pathologists agree, that the disease is essentially a resident of the nervous texture. "It has been shown," says Flourens, "that the immediate cause of muscular contraction particularly resides in the spinal marrow and nerves." The phenomena of the nervous system seem, at present, to be receiving a great share of attention. C. Bell, Magendie, Flourens, and others, appear to be daily shedding fresh gleams of light on this dark and intricate subject: yet it must be confessed, that the physiology of the nervous tissue is still, and perhaps ever will be, enveloped in mystery.

Notwithstanding tetanus exists solely in the nerves, their peculiar condition or change of function giving rise to the morbid process, is yet undiscovered. It has been supposed to arise from an inflammation of the meninges of the spinal marrow; but Dr. Carmichael in his dissections could not discover any morbid appearances either in the cord or its meninges. As several sorts of actions are admitted in the nerves, that which constitutes this disease is certainly irritative to the muscles, and results, according to the greatest mass of evidence, from a deficiency of arterial action, more especially in the part in which the disease originated, connected with a high degree of general irritability. This doctrine has been more particularly enforced by Latta, and our illustrious countryman, Dr. Rush.

Cure. The indication of cure in this disease, does not differ from that of irritative nervous diseases in general, already laid down. Alcohol, opium, wine, bark, tinct. canth., spts. turpentine, have all been severally or jointly employed for the purpose of overcoming the nervous irritation. "From the general failure," observes Dr. Carmichael, "of the plans hitherto employed, I shall feel no hesitation in giving a full trial, in such cases of tetanus as may next happen to come under my care, to alcohol in any of its various combinations, ether largely diluted, both in the form of draught and enema, and combined with opium." Mr. Latta's practice consisted in endeavouring to excite a general vascular excitement by tinct. opii at first, and then to have it kept up by large does of bark and wine, and to raise an inflammatory action in the wound. As for the local vascular action, it can have little or no effect in removing the disease; for although the affection originated in the wounded nerve, the morbid process is diffused throughout the whole nervous tissue, of which the wounded part is only a minute portion. Were this local stimulation moderately adopted from the beginning, I am induced to believe tetanus would be unheard of. "Our first care, therefore," says Latta, "should be, in warm climates, or in cases where we have reason to fear a tetanus, to dress the wound in such a manner as to bring on the requisite inflammation," or "as much inflammation as is *consistent with resolution*." By inflammation, is here meant not a morbid process, but as much vascular action as is sufficient to overcome the irritative nervous process.

It will be seen at a single glance, that all the means here recommended, have a direct tendency to fulfil the indications of cure formerly insisted on in irritative nervous affections; and show, in a twofold point of view, the necessity of early adopting and rigidly enforcing the plan of treatment recommended in the section on *Wounds*.

Nervous Mercurial Irritation.

Besides the vegetable, there are several mineral agents capable of producing nervous irritations, independently of vas-

cular action or organic derangement. The most remarkable of these are *lead* and *mercury*. The appalling effects which sometimes arise from the use of lead, seem to restrain the incautious use of that article, except in hydrophobia, in which enormous doses have been recently administered with the most flattering results. Mercury, however, is a most favourite remedy, fulfilling more indications than any article of the materia medica, since the most imposing authority is not wanting to prove it a stimulant, tonic, sedative, antispasmodic, emmenagogue, &c. &c., besides possessing minor properties almost *ad infinitum*.

Notwithstanding the protean effects of the abuse of this mineral have been faithfully delineated, many more unquestionably remain to be added to the frightful catalogue; and here I must beg leave to introduce two cases, which fall within the limits of my plan.

Case first. A lad, æt. sixteen, for the removal of the psora, used an ointment containing oxymuriate of mercury. Shortly after, he was seized daily with pains in the fingers of both hands, which continued from six to eight hours, and then gradually disappeared until about the same time the next day. Although the paroxysms of pain were most excruciating, the pulse was not affected at any time, nor was there any functional derangement of the body, nor discoloration, swelling, or soreness of the fingers, but on the contrary, they were prone to be cold. The severity of the pain advanced daily, and at length became so intense, that his parents were compelled to take measures to prevent him from doing violence to his person. He found no relief from medicine, except in large doses of opium; and even this finally failed him. After two months' inconceivable agony, his sufferings began to decline, and at length left him in good health.

Case second. Mrs. H., two days after taking a cathartic containing submur. hyd., became salivated. The ptyalism soon ceased, and she was seized with severe pain in paroxysms, beginning about 7 P. M. and continuing about five or six hours. It was seated in both sides of the face, more towards the angle of the jaw than tic doloureux, but in other respects resembling it—except that it was more intense, resembling, as

she expressed herself, lightning flashing up from her jaw. After going the round of ordinary remedies, local and general, for two months, she was suddenly relieved by an emetic every evening, given at the moment the paroxysms commenced. About 20 grs. of pulv. ipecac. were administered at a dose, and this was followed by a decoction of quassia every forenoon, combined with the carb. pot. The emetic, I presume, by its sudden impulse on the nervous system, effected a change in the morbid condition of the nerves concerned, whilst the tonic supported the natural powers of the system, and thus prevented the evolution of the irritative action.

(*To be continued.*)

ART. II. *On the combined administration of Nauseating and Purgative Medicines in cases of difficult and suppressed Menstruation.* By ANDREW HAMERSLEY, M. D. of New-York.

OF all those various sympathies existing by virtue of the animal economy, there are perhaps none which present themselves to the medical practitioner under more interesting circumstances, and claim more imperiously his minute regards, than those which relate to the functions of the stomach and uterus. The occasions are so frequent which remind him of this sympathy, and forcibly suggest to him a recurrence to it, that he is almost without excuse if he fail in his administration of remedies to bestow on it a correspondent regard. As a provision of nature, this sympathy serves to affect us with a strong sense of the sufficiency of her purposes, when her abilities are exerted to produce phenomena connected with and dependent upon the organization of the animal frame. The womb, with its appendages, in a manner remote from the application of such remedies as we discover, by reasoning and experience, to be effective of curative results, when applied to particular maladies of other organs, is, by means of this striking sympathy, rendered capable of being acted upon by such means as may seem appropriate to the control of its irregular conditions. Except when, under the excitement of conception and

consequent impregnation, these sympathies attract comparatively but feeble notice. No sooner, however, is this organ called upon to perform these its highest intentions, than the stomach begins to evince its correlative influence: it is at once constituted an index, by which to judge of those changes which are taking place within the uterus. The morning nausea, with occasional vomiting—an inability to digest the grosser viands—frequent heartburn,—all these stand forth, and declare themselves the interpreters of Nature's doings.

The stomach seldom becomes for a long time excited, without producing more general impressions. Thus, in the more advanced stages of gestation, we have the ordinary exhibitions of nervous irritability, not unfrequently a host of imaginative forebodings—and, with very few exceptions, that indescribable, but no less singular expression of visage, which tells of a female about to become a mother.

From all this, it must be most apparent that any morbid conditions affecting this viscus, must tend most essentially to impair the health of the female. The experience of the novice in the practice, as well as that of the tyro in the study of medicine, are each sufficient to warn him of such consequences, and teach him duly to appreciate all that appertains to the healthy structure and morbid changes of this organ. When called upon to administer aid in every case of complicated disease invading the female habit, has he been properly instructed to reason and observe, he *cannot* forget to take into his most serious consideration, how great and how important are the influences it exerts on the system. No superficial prescriptions, no hasty glance of symptoms, and as hasty and no less incorrect formation of opinion, will here suffice him. There are certain irregularities frequently observable in the state of this organ, which manifest so intricate, and sometimes such opposite symptoms, that the judicious practitioner is affrighted at the assemblage, and hardly dares rely on the resources of his own art. We may safely venture to assert, that no woman can long labour under either of those conditions of the uterus specified at the head of this article, without soon feeling, whatever her delicacy may prevent her from expressing

all that sickness at heart, which her pallid lips—her emaciated form—her half-vibrating, half-concealed pulsations—her cheeks, now flushed with the glow of hectic anxiety, now pale with the languor of dejection—her whole visage marred with longings after health,—tell, in tones strong enough to excite the deepest interest, and the most vigorous exertions of skill. The physician, we are to presume, is seldom, or perhaps never, to despair of affording the requisite relief. If he cannot restore health, he may perchance arrest the ravages of former disease, ameliorate present symptoms, and ward off future despair. That he should frequently himself sicken at the idea of having recourse to the boasted uterine remedies, which either popular opinion, or treatises of the materia medica extol, as the proper weapons of his profession, with which to encounter this insidious form of disease, we are not at all astonished. Eminently successful must have been that physician, who has often employed them, and not often found them vain. But our astonishment must not cease, if, upon probing the matter, we find these medicines rather calculated to allay urgent and harassing symptoms, than to strike at the seat of the disease, which, if they reach not, they do but accomplish half their purpose. It is to this circumstance that we are to ascribe that host of nervines, which the routine prescriber so sagely enjoins upon his patients, who, by long continued uterine disturbance, are agitated in every nerve. Of all the curses, which a too sedulous attention to the names and symptoms of disease, as they are portrayed in books, and too little regard to their source and origin in the human frame itself, has entailed upon our profession, this is doubtless one of the greatest. Nay more: till we become emancipated from these shackles, and learn to study disease in the school of nature, and correct philosophic observation, we shall find that, in place of advocating and professing a liberal and a dignified science, we are but reducing it to the level of the empiric, and derogating from its vital and essential principles. To adhere to these principles, is to reason and to think; to disregard them, is to hazard the best interests of our profession at the shrine of literary idolatry, and sacrifice upon the altar

of great names, still greater and more enduring truths. To argue to the subject under consideration.—The unfortunate female who labours under one of these characters of disease, and whose gastric organ becomes secondarily affected, and in its turn creates an extensive train of nervous phenomena, is led to hope a renewal of those functions so necessary to the integrity of her animal operations, and the quiet of her mind, from accumulated doses of musk, camphor, and assafœtida. So strong a hold have these remedies obtained in the profession, that in almost every system of materia medica, they comprise a large portion of that class of medicines entitled *emmenagogues*. But to the rational inquirer, such methods of treatment must appear totally opposed to those considerations of such diseases which he has been taught to imbibe, as the result of close observation and scientific research. His mind becomes deeply impressed with the importance of regarding that distinction between an evolution of symptoms, subsequent upon, and a morbid character of change essentially connected and contemporaneous with the disease itself, enjoined by the established principles of the healing art, and the deductions of enlightened experience. Thus chastened in his views, he seeks a more intimate knowledge of the disease he is called upon to treat. He inquires into the alterations which have ensued, either immediately or remotely, upon the original malady. Not content with this, he investigates the sympathies which have been induced, and endeavours to arrange them in his theory, and *combat* or *enlist* them in his practice, as their importance and character shall demand. Thus guarded in his premises, he can hardly err in his conclusions; and if he be unable to reach the immediate seat of the disease, he will never neglect to avail himself of its immediate sympathies, whenever they may evince themselves with sufficient force, or be capable of feeling the power of medicine. By these means he is instructed, that any exhibition of remedies which merely serve to palliate the more remote symptoms, can never be available to the extermination of the evil. As in the instance under consideration, he would never place his reliance upon an antispasmodic bolus or carminative

pill, while a more extended capacity for detecting disease shall furnish him with such treatment as may suit the real exigency of the case. Relying upon these indications, his chance of success becomes proportionately enhanced, while he enjoys the great gratification of rendering his practice subservient to principles, and not to the dogmas of established routine. Before advancing to the express purpose of these remarks, there is one other crude practice formally adopted in the treatment of uterine affections, which it will be of conseqence to notice. To suppose a case of amenorrhœa, where the physician is not commonly summoned till the patient experiences that aggravation of symptoms attendant upon the period of periodical evacuation, it instantly occurs to him, more, however, it is to be feared, from the force of a lesson, than from the suggestion of reason, to substitute some topical evacuation, as vicarious of that which takes place in the healthy operations of the system. So far as this affords present relief, and perhaps obviates effusions which might otherwise ensue, and prove eminently injurious, the prescription is sufficiently judicious. But who has not observed the every-day practitioner, having completed this task, most imperiously proclaim to the sufferer, that naught else can be done on his part, and at the same moment cautiously enjoin upon his patient, the next time, as he emphatically expresses it, to summon his assistance, when his lancet will again perform its required service? No queries are made as regards the length of time the malady has continued, no interrogations in reference to the general health, none of those minute inquiries which the wise physician never fails to institute. The menses are arrested, the patient must be blooded. This too is called orthodox practice. If it be so, its orthodoxy must needs be derived from the creed of vilest empiricism. This practice, among a certain class of practitioners, has grown into an established habit, and it may perhaps even be compared to that barbarity which influences the accoucheur, after having mechanically assisted the parturient female, to leave her to linger or to die. From this it necessarily ensues, that the uterus, so long unaccustomed to its own peculiar discharge,

looses its wonted tone and stimulus. It cannot be expected, by the well known laws of the animal economy, that impregnation can ensue in an organ, the exercise of whose powers is for so long a period intermitted. Under this aspect of the case, the physician who contents himself in these instances by substituting a vicarious evacuation, inattentive to those measures which, properly enforced, enable this viscus to perform its own functions, become the cause of great and too often irreparable injury. It does not come within the purview of the present observations, to unfold that general course of treatment, which in a great majority of instances, is suitable to bestow on the uterus the capability of exerting its own powers. Such treatment must always be modified by the habit of the patient, the present state of debility or vigor, and other attendant circumstances.

I have thought the preceding observations pertinent, if not requisite to the exposition of the following case, which came under my medical superintendence at the time specified, and to such suggestions as it may practically afford.

September 2nd, 1823. I was this day requested to visit Miss B——, aged about twenty, habit rather plethoric, pulse slow and regular, but denoting fulness of the vascular system. Bowels regular—appetite good. Two years previous to this period, her catamenia were suppressed, and so continued for two months. This the patient attributes to undue exposure to cold. Since this event, they have occurred with regularity, but at each time in extremely moderate quantity. She had also for some time past experienced some considerable degree of abdominal effusion, accompanied with œdema of the face and limbs. At each return of those periods when her usual slight uterine discharge took place, she would suffer an increase of these separate effusions, with the ordinary symptoms of head-ache, pain in the loins, as incident to these disturbances. On my first visit, I discovered no other tumefaction but that of the abdomen. The patient, however, complained of some difficulty of breathing upon ascending an eminence, or while enjoying the recumbent posture. These circumstances gave me cause to apprehend a tendency to

thoracic effusion; a suspicion rendered probable by the disposition her system had already evinced. To all this were added occasional feelings of great weakness. She had taken no other remedy but an infusion of horse-radish, mustard, and white-oak bark in cider, of which she reported herself to have drank two gallons without benefit.

℞. Rad. Colomb.
Sup. tart. potass. āā. ℥ss.
Rad. Quass. ℥ij.
Aq. Bullien. Oj. M.

Fiat infusum de quo capiat dua cochlearia magna quat. in. die.

September 6th. Swelling of the abdomen rather lessened—conceives the medicine to have been of some service. Pulses, appetite as before. Repet. Med. September 10th. Evidently improved. No visible signs of swelling about the abdomen or feet. Pulses less full—complains of borborygmi. Repet. med. addend. coch. mag. un. rad. cochleariæ armor. September 18th. Appearance not so favourable as at last report—has omitted the medicine for some few days past, in consequence of not having retained the prescription. One menstrual period has also passed by since my first attendance, which was concealed by the patient, and marked by the aggravation of symptoms hitherto noticed on these occasions. Other circumstances as before. Repet. medicam. September 29th. Visited patient, but found her not at home—pursuing her remedy. October 1st. Improved, though with some slight swelling of the abdomen, none of the lower extremities. Expects the return of menstrual evacuation in a few days. October 4th. This was about the period of menstrual return; but as yet no symptoms of it have occurred, or any increase of swelling. Drew from the arm twelve ounces of blood, which produced deliquium, and ordered ten grains of ergot to be taken *instanter*, which failing to affect the uterus, the same dose to be repeated on the ensuing morning. October 8th. General appearances much improved. Has taken both powders of ergot, but without producing the proper discharge, although the hitherto attendant symptoms of increased swelling have not shown themselves. Repet. infus. ut. antea. October

21st. Has suffered for a day or two past head-ache, with pain in the loins and back, the common signs of suppressed menstruation, but unaccompanied with any dropsical effusion.

It is presumed that the patient is again labouring under an effort to menstruate, and that one period has passed by without any of the previous concomitant symptoms. Pulses at this time calm and regular. Has assiduously continued her tonic drink. ℞ Pul. purg. ʒss. cras mane capienda. Oct. 25th. Took the medicine last prescribed, which produced *much sickness, and plentiful discharge from the bowels.* She affirms her health to be in a materially more improved condition than for two years past, and the uterine functions are duly restored. We proceed to notice some few particulars connected with the foregoing case. The serous effusions referred to, were doubtless the efforts of nature to institute an action in some degree correspondent to that which had been morbidly interrupted, and is moreover to be considered as connected with the plethoric habit of the patient. Under such circumstances, experience and reason authorise us to expect such results. In place of such effusion, we, however, sometimes observe sanguineous discharges from various parts, by hæmorrhage from the lungs, nose, &c. But it is not in every instance that nature is herself competent to such exertions of the *vis medicatrix.* This it is which has induced me to regard this state of things, as also *connected with the plethoric habit of the patient.* But where such plethora does not exist, nature is less capable to establish remedial efforts, and in lieu of such effusion, the nervous fibre sustains a considerable degree of increased *irritation*, the muscular, of increased *relaxation.* Hence the whole complication of nervous phenomena before adverted to, and all that peculiar debility which marks the unfortunate sufferer. To this is ere long superadded a variety of cachectic symptoms, which frequently bewilder and astonish the medical attendant. To pursue the plan of the empiric, and adopt a course of repeated bleedings in such instances, would tend neither to increase the reputation of the practitioner, nor prolong the life of the patient. An attention to the whole state of the system, a judicious and

well regulated prescription of tonic medicines, the injunction of regular exercise, strict regard to such means as preserve and invigorate the tone of the stomach, and ensure a due action of the functions of the alimentary canal, as well as those which especially *excite the sympathetic action of the uterus*, are alone sufficient to counteract such unhealthy influences. By a reference to the progression of symptoms, as above related, it will be seen, that about two weeks after the period of venesection, which the patient presumed to be that of her regular evacuation, she was again attacked with the ordinary premonitory signs of menstruation. It is difficult to explain the revolution of symptoms which frequently occur in these embarrassing forms of disease. I should be tempted, however, in the preceding instance, to view this return of symptoms as indicative of renewed efforts on the part of the uterus, to resume its proper secretions, particularly as occuring in a habit endowed with sufficient energy to render the result, under proper management, favourable.* It is in some degree confirmatory of this supposition, that these discharges had been anteriorly, with the exception above detailed, regular in the time of their appearance, though scanty in amount. The absence of any accompanying dropsical effusion, though no bleeding had been premised, as in the previous instance, would seem to encourage such opinion. The exhibition of any remedy under such circumstances calculated to excite the due return of the menstrual discharge, by affording a stimulus to the uterine organ, would appear perfectly accordant with correct physiological principle. It is possible, indeed, that this evacuation might have occurred without the employment of any such means; but as the irregularity of its appearance had been of long duration, and the attendant signs existed for two or three days without such occurrence, we, I should presume, would be perfectly authorised to attribute the immediate result to the use of the purgative medicine. When the prescription was enjoined, it is well

* Could any thing be here attributed to the previous employment of the ergot in tending to effect a healthy sensibility of the diseased organ?

to state, I was principally attentive to the discharge which would be thereby procured from the alimentary canal, and the sympathetic effect on the part of the uterus. It did not then occur to me, that this sympathy might be more fully exerted by calling in aid the action of the stomach, in the production of nausea. This fortunate consequence did, however, ensue, for the patient particularly referred to her medicine as creating much sickness. It is also to be allowed, that purgatives of a more stimulating character would, in the majority of cases, be more suitable than such as were here had recourse to. The more especial object of these remarks is to solicit attention to the advantages which, from physiological principle and practical experience, we may fairly anticipate from the combined use of remedies which nauseate the stomach, and purge the intestines, in various cases of uterine obstruction. We are well aware that many purgatives create nausea previous to and during the time of their operation, but not generally, it is apprehended, in a degree sufficient for this purpose.

The selection of the particular combinations will be best regulated by the discriminating physician, so as to meet the exigency of the particular case. In every disease marked by the occurrence of a certain routine of symptoms at certain intervals, which afford to it its distinctive character, our notice should always be in part directed to the general constitutional appearances, which are effected by the local malady, as well as to the direct seat of the organ or spot implicated. These two indications serve to guide us in the teatment of all such affections.

In epilepsy and intermittent fever, both frequently depending upon a derangement of the same viscus, we strictly adhere to this principle. We endeavour, by appropriate methods applied near the period of the expected occurrence of the paroxsym, to obviate its re-appearance. Not content with this, we are taught, and very justly, to institute such other means during the intermission, as will repair the impaired tone of the system. Now, it has so happened, that in attempting to alleviate uterine obstructions, we are but too apt to lose

sight of this *methodus medendi*, which we are wont to enforce in analogous instances. This analogy, in reference to intermittent fever, is sustained by the following considerations:— Every secreting surface, endowed with a sensibility closely allied to its inherent structure, and varying in degree in proportion to the importance of the secretion itself, and the character of the relations it sustains with the general operations of the animal economy, is, of course, liable to actions irregular and depraved. Of all the morbid influences to which such surfaces are exposed, none are of so predominating a character as those which result from atmospheric vicissitudes. In intermittent fever, an exposure to such vicissitudes is followed by an interrupted action of the cutaneous secretion, in uterine obstructions, of that secretion which is peculiar to this organ. To prevent the return of the paroxysm, we in the one instance unlock the pores of the skin through the medium of the stomach; in the other, we excite the due action of the uterus by the instrumentality of the same medium. To pursue the analogy farther. In the intermissions between the paroxysms, we administer such general remedies as the state of the system may seem to require. We should act wisely in assimilating our practice in one other, and that, as has been already exemplified, by no means an unimportant particular, in reference to these two diseases, viz.: of the institution of such means just previous to the occurrence of the uterine paroxysm, as will possess a tendency to reproduce the deficient or absent secretion. Such is the plan we adopt in order to obviate the checked cutaneous secretion in intermittent fever. A few grains of tartarised antimony given for one or two hours in anticipation of the chill, will, by the production of nausea or vomiting, unlock the constricted pores of the skin, and restore to it its proper function. The same method of treatment, we have sufficient grounds for believing, will, in many instances, produce a corresponding effect upon the uterus. Here also it may sometimes be advisable to excite emesis, in place of protracted nausea, while we also evacuate the alimentary canal.

We then in both cases, as before observed, in the interval, employ such remedies as are calculated to fulfil general and

appropriate indications. By the enforcement of this plan, we are acting in accordance with the impulses of nature, and the dictates of the soundest physiology—the only guides which can ensure to us success in the legitimate exercise of our profession.

Note. It has been deemed advisable, in connexion with the statement of the foregoing case, to advert briefly to the use of a particular remedy therein specified. Reference is had to the ergot. Its use in the above instance was suggested by its acknowledged efficacy in aiding the operations of the uterus in cases of parturition. From hence it was presumed that its administration might prove serviceable in other instances, where a powerful stimulus was required on the part of the uterus. The issue of the trial, as will be observed, was not favourable. I can, however, aver, from the result of many other trials, that complete success has been obtained in diseases of a similar character, where the same remedy has been employed. Much has been said in opposition to this remedy, as producing effects of too violent a character on the uterus, and being consequently unsafe in unskilful hands. Every objection against the employment of a remedy founded on such grounds, should be met by one general reply. Were we to discard from the profession every remedial agent capable of effecting highly detrimental results, unless guarded in its administration by the dictates of a well regulated judgment, we should most sadly circumscribe the list of those means, by which we not unfrequently attack and subdue lurking maladies. The objection, moreover, presupposes a want of requisite ability on the part of his medical brethren by him who urges it. It is the enlightened exercise of judgment, which establishes the distinction between the well educated and liberal physician, and the boastful assertions, and no less indiscriminate practice of the wily mountebank. But it has been, moreover, pleaded, that the bestowal of approbation on this medicine by the faculty, would tend to render its use frequent among those who, actuated by various motives, would be desirous to procure abortion. To this it may be rejoined, although we allow the argument to possess some weight, that wherever such intentions are maintained, neither this, nor

any other means can be adopted, without prejudicing to an alarming degree the life of the parent. It is not my design to enter into a defence of this remedy, but only to invite attention to the benefits it may convey, when employed in the class of diseases which forms the subject of the preceding remarks. Advantage will in these instances be derived from administering it in conjunction with some stimulant cathartic; and for this purpose, I have frequently combined it with powdered jalap in the following proportion:

Pulv. Ergot
Pulv. Jalap, aa. gr. xv.

We here obtain the double advantage of the nauseating effect of the ergot,* and the purgative quality of the jalap, and thus administered about the expected period of menstrual evacuation, it has, even after a long continued irregularity of this function, succeeded in effecting its healthy renewal. The above prescription, it may be proper to remark, must be so modified, as to assort with the constitution and general temperament of the subject. Should subsequent attempts made with this medicine be followed by equally advantageous results, it may form the subject of future communication.

ART. III. *An Account of the Salt Springs at Salina, Onondago County, State of New-York; with a Chemical Examination of the Water, and of several varieties of Salt manufactured at Salina and Syracuse.* By LEWIS C. BECK, M. D. Professor of Botany, Mineralogy, &c. in the Rensselaer School.

[Read before the Albany Institute.]

THE Salt Springs at Salina, whether considered as a source of revenue to the State, or of wealth to its inhabitants, are deserving of the highest consideration. It is very desirable, therefore, that we should possess the most accurate information concerning their chemical composition and their geologi-

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* The ergot can influence the uterus only through the medium of the stomach, and in this manner only can it be said to act specifically.

cal relations, as well as those artificial causes which affect either the quality or the quantity of the salt which they produce. Their origin should also be inquired into, with all the lights that can be afforded by experiment and observation. This indeed appears to me to be the most important object embraced in such a course of investigation. If the facts which have already come to our knowledge, are such as to lead to the belief that these springs are formed by the solution of rock salt, the State, as well as individuals, might with less risk incur the expenses attendant upon a search for this useful mineral. But if on the other hand, these facts go to disprove the existence of rock salt, all these subterraneous explorations may, at least for the present, be suspended.

It occurred to me that an examination of the Salt Springs, embracing the above objects, but more particularly their chemical composition, would prove of general interest; and the more so, as the notices of them hitherto published are so extremely imperfect and unsatisfactory. To effect this purpose I have several times visited these springs; made preliminary experiments upon the spot, and completed the analyses upon my return. I have as much as possible studied accuracy and precision, and have seldom depended upon the bare assertions of others. Much assistance, however, has been derived from the papers heretofore published, on the salt springs and manufactories of Salina, and from various reports made upon these subjects to the Legislature of our State. Among the most valuable of these are, "A memoir on the Onondago Salt Springs, and the Salt Manufactories in the States of New-York," by the late Dr. Benjamin Dewitt.* Manuscript reports to the Legislature by Drs. Noyes and T. Romeyn Beck:† and, "An Essay on Salt," by Dr. Jeremiah Van Rensselaer.

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* Transactions of the Society for the promotion of Agriculture and the Arts, vol. I. p. 268.

† The communication of Dr. T. R. Beck, was made in answer to sundry queries of a committee appointed by the Legislature of 1821, of which Simeon Ford, Esq. the present superintendant of the State works at Salina,

Description of the Springs.

The Salt Springs which I am about to notice, are situated in the State of New-York, at the head of Onondago Lake, in the county of the same name, about one hundred and thirty miles west of Albany.

This lake is about six miles in length, and one mile in width, and although surrounded on every side by the strongest salt springs, its water is perfectly fresh in every part of its surface. The brine being specifically heavier than the fresh water, falls to the bottom, and can be obtained from thence by sinking a closed bottle, and then withdrawing the cork.

The borders of Onondago Lake are usually marshy, and sometimes quite heavily timbered. At Salina, the marsh is of considerable extent, and many plants are observed to grow in it, which are also found in the salt marshes on the sea coast, and not elsewhere; as *Salicornia herbacea L. Salsola salsa, Mx. &c.* This fact appears to strengthen the opinion adopted by Decandolle and others, that vegetation is in every case the product of the joint influence of temperature, soil, and the particular composition of the moisture of the earth.* Upon the theory of Linneus, that all plants have descended from a few parent stocks, and that they have been distributed from one point on the surface of the earth to all its parts, we should be at a loss to account for the existence of these plants in situations so remote from each other, when they do not flourish at any intermediate points.

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was chairman. This gentleman carries into his office, a scientific and practical knowledge of the subjects connected with the manufacture of this important article, which must be productive of very beneficial results. The answers to these queries contain a very comprehensive view of the methods of manufacture pursued in foreign countries, and many useful suggestions, the recent adoption of which has had the effect of greatly improving the quality of the Onondago salt.

* Elements of the philosophy of plants by Decandolle and Sprengel, p. 283.

Among the vegetable productions with which this region abounds, I noticed a rare species of *Ranunculus*, *R. cymbalaria* of Pursh, and which is characterized as follows:—*Root* perennial. *Stem* filiform, creeping, sending out roots at the joints. *Leaves* on long petioles, somewhat reniform, obtusely 5-toothed, cordate at base. *Peduncle* radical, 4 to 6 inches high, solitary, 2—5 flowered. *Flowers* pale yellow, small. *Petals* linear. *Fruit* oblong. Flowers in July.

It is in the marsh just noticed, that the most valuable salt springs are found. Those which are most strongly impregnated are at Salina, although inferior ones are quite numerous in various parts of the marsh. They issue from the black soil of which it is composed, by small orifices, and at the distance of a few feet from the surface. Reservoirs are constructed at different places near these springs for the convenience of the manufacturers; and from these, by the agency of pumps, the water is conducted through pipes to those works which are at a distance from them.

Geological situation.

The surface of the valley of the Onondago, is several feet below the level of the adjacent plains. The first three or four feet consist of a black mud, which is very soft, and is made up for the most part of decayed vegetable matter. Below this is a stratum of earthy marl, from three to twelve feet in thickness, and containing several interesting organic relics, chiefly shells; of which I collected the following: viz.

Cyclas postumia,	Helix perspectiva, *Say.*
Planorbis trivolvis,	Helix tridentata,
Planorbis bicarinatus,	Helix thyroideus,
Planorbis campanulatus,	Helix abolabris,
Melania virginica,	Unio ventricosus,

together with a new species of *Paludina*, which had been previously discovered by my friend Mr. James Eights, and which will be noticed elsewhere.

A specimen of this marl yielded, upon a careful analysis, the following results in one hundred grains.

Carbonate of Lime - -	83 grs.
Silex - - - -	10
Alumine - - - -	7
	100

Every where imbedded in the marl are to be seen nodules, masses, and even continuous strata of indurated clay, containing fragments of decayed or charred wood. It is often so solid as to present the appearance of a rock formation, and below the marl it alternates with layers of quicksand, and continues, according to Mr. Byington, to the depth of eighteen feet.* After this we reach a conglomerate, composed of rounded pebbles from one to two inches in diameter. It is probable that this continues for some distance, although it has hitherto been explored but five or six feet.

According to Professor Eaton, the saliferous rock forms the floor of all the salt springs of the canal district. This rock is about 150 miles in length, and something more than twenty miles in breadth on an average, extending from near Little Falls, to the west end of Lake Ontario. It descends like an inclined plane to the Genesee River, where it is about two hundred and fifty feet lower than at the ridge between Little Falls and Utica, where it crosses out and terminates.†

Before leaving this part of my memoir, I should notice a remark which I find in Dr. Van Rensselaer's Essay on Salt. It is, that "abundance of gypsum has been found associated with the salt in the same manner as has been observed in Europe."‡ Observation has not satisfied me of the correctness of this assertion. Indeed, as Mr. Eaton remarks, gypsum is never associated with the salt formation in the canal district. "I am aware," says he, "that it has often been as-

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* Document B. accompanying the report of the Commissioners appointed to perform certain duties relative to the salt springs in the county of Onondago, made to the Legislature March 18th, 1825.

† Geological and Agricultural Survey of the district adjoining the Erie Canal. Part I. p. 103—4.

‡ Essay on Salt, p. 31.

serted, that gypsum and salt are two constant associates in the State of New-York. But there are certainly three distinct strata, including the iron formation, between those which contain the gypsum and the salt where they approach the nearest, between Oneida Lake and Genesee River."*

Origin of the Springs.

Several theories have been suggested to explain the origin of salt springs. By some it is maintained that they proceed from strata, which absorbed the salt waters of the ocean while they stood over the earth. While these waters have been gradually draining down into the lowest cavity, what is left would become less dilute; and as it would constantly increase in saltness, the brine in some places would be brought to the strength necessary for crystallization, and hence rock salt would be formed. According to this theory, solutions of rock salt are not admitted for the supply of these springs, which last, is the commonly received opinion with regard to their formation. This opinion receives great support from the fact, that brine springs are usually found reposing upon strata of rock salt. In our state, however, no rock salt has hitherto been discovered; and from the fact, that the saliferous rock has been accurately examined to a great depth, Mr. Eaton is led to infer that it does not exist. He suggests the idea, that this rock and some of the overlaying strata contain the elementary materials, and "that the brine springs are the daily productions of Nature's laboratory."† This I observe is also the theory of M. Patrin, who supposes that salt is daily formed in the rocks or springs. The Chevalier de Bray, in his "Voyage en Tyrol," is of Patrin's opinion, and cites the numerous abandoned galleries which are narrowed by the efflorescence of salt.‡ For the purpose of test-

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* Canal Survey, p. 113.

† Canal Survey, p. 109.

‡ Mineralogie appliquée aux arts, par C. P. Brard. vol I. For extracts from this work, I am indebted to Dr. Dekay of New-York, a gentleman well known to the scientific world. I have derived much assistance in the

ing the correctness of this theory, so far as it relates to the springs at Salina, I have analyzed specimens of the saliferous rock from different localities, and in none have I been able to detect the elementary materials of muriate of soda. Other considerations appear to me to render such a supposition altogether improbable. 1st. The saliferous rock is found in various parts of the United States unaccompanied by salt springs. 2d. If this rock contained the elementary materials of muriate of soda, in such proportion as to form these brine springs, we should every where, or at least occasionally, see it covered with crystals of this salt; but this is not the case. 3d. If the saliferous rock contains muriate of soda, or its elements, it has been incorrectly described by all our writers on geology, who assert that it consists essentially of siliceous particles, united by an argillaceous cement.

Is it not more rational to refer the origin of these springs to a stratum of rock salt? The circumstance of its not having been heretofore discovered, although several strata below the saliferous are exposed on the canal route, is, in my opinion, no argument against its existence; for it may be, and no doubt is, confined in its locality to the vicinity of the springs. The question is far from being settled; but of all the theories which have been suggested, the latter appears to me the most plausible. And if the facts which we possess are not yet sufficient to prove its correctness, it is at least free from those objections which bear with so much force upon all the other explanations which have been attempted.

Chemical examination of the brine.

This was conducted with a view—1st, to ascertain the nature of its ingredients; and 2d, to determine the proportions of these ingredients, and their combinations.

To fulfil the first intention, the following experiments were tried either at the springs or upon portions of the water ob-

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present undertaking, from a perusal of his manuscript collection of "Facts and Observations drawn from various writers on the subject of Salt."

tained from thence, after having been carefully sealed up in bottles.

I. Infusion of litmus was *reddened* when poured into brine recently taken from the spring, but this effect was not produced when it was gently boiled, or when it had been exposed for some time to the air. Hence I inferred the presence of free carbonic acid. This is moreover evident by the bubbles which rise to the surface of the water, at which the gas can be collected into receivers and submitted to experiment. It is formed at the bottom of the spring, and passes through the water, but as Dr. De Witt correctly remarks, "does not appear to incorporate with it, or at least not in any perceptible degree; for the brine has none of that sparkling brightness, nor the pungent odour, so characteristic of carbonated waters." On this account I made no experiments to ascertain its quantity.

II. As the above trial also satisfied me that no other uncombined acid existed in the brine, I was next desirous to test the presence of alkalies. For this purpose papers stained with the infusion of turmeric were suffered to continue for some hours in a portion of the brine; their intense yellow colour was not in the least affected. But upon the addition of a minute quantity of either of the alkalies, it instantly changed to a reddish brown.

III. Tincture of nut-galls and prussiate of potash were added to different portions of brine, without being followed by any change of colour. These tests would have satisfied me that no iron was contained in the water, had I not observed that Dr. Noyes, in his analysis, states oxide of iron to be one of its ingredients.* Although not noticed by any other

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* Dr. Noyes estimates forty gallons, or three hundred and fifty-five pounds avoirdupois of brine to produce fifty-six pounds of saline extracts: of which is

Pure Muriate of Soda	51.00
Carb. of Lime coloured by Oxide of Iron	0.06½
Sulphate of Lime	2.04
Muriate of Lime	1.12½
Muriate of Magnesia perhaps.	

Van Rensselaer's Essay, p. 33.

Is it not probable that the iron, which is here credited to the brine, was derived from the kettle in which the analysis was conducted?

chemist, I thought it of consequence to make further experiments. As Mr. R. Phillips has ascertained that when iron is in a state of peroxide, lime prevents the action of the tincture of nut-galls,* I therefore added to a phial of the brine a small quantity of oxalic acid, and to the filtered liquor applied the gall-test after the manner adopted by Klaproth in his analysis of Carlsbad water, as follows: A slice of the gall-nut was suspended by a silken thread in the brine, and suffered to remain for some days, but no dark cloud was to be observed surrounding this re-agent.

From all these experiments we may safely conclude that iron forms no part of the brine at salina.

IV. Muriate of barytes produced a white precipitate which was partly dissolved by muriatic acid; hence I inferred the presence of sulphuric and carbonic acids in combination with alkaline or earthy bases.

a The following experiment proved that the carbonic acid just detected was combined with lime. A glass vessel full of the brine was boiled for some minutes; a precipitate fell down, a part of which when dried, dissolved with effervescence in dilute muriatic acid, and this dilute solution gave a copious precipitate upon the addition of oxalate of ammonia.

V. Nitrate of silver afforded a very copious white precipitate, indicating the presence of a large proportion of muriatic acid.

VI. Oxalate of ammonia instantly produced a dense white cloud, proving the existence of lime.

VII. To a fresh portion of brine freed of its lime and sulphuric acid by oxalate of ammonia and muriate of barytes, was added phosphate of soda and carbonate of ammonia; a precipitate was immediately produced, proving the presence of magnesia.

Several other experiments were tried with a view of ascertaining completely all the ingredients of the brine, but they led to no further discoveries, and it is therefore unnecessary

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* Analysis of Bath waters.—*Phil. Mag.* No. 24. p. 349.

to detail them.* As it is however stated, by Dr. McNevin, that *potash* exists in this water, and that the sulphuric acid, instead of being united with lime, is in combination with that alkali,† it may be proper to detail the experiments which satisfied me that the assertion was unfounded. This was indeed rendered sufficiently improbable by the fact that sulphate of potash is so easily decomposed by the muriates of lime and magnesia, both of which are allowed to exist in the Salina water. The occurrence of this salt in mineral waters is moreover extremely rare, and I can find no mention of it in any of the tables of their composition which I have examined. But to proceed to the experiments.

a. To a test glass filled with brine, somewhat concentrated by evaporation, tartaric acid was added in considerable quantity. It remained for some time without producing the least change. But when the acid was added to distilled water, holding in solution a minute portion of sulphate of potash, a crystalline salt (the supertartrite of potash) immediately collected and fell to the bottom of the glass. The same result was also produced upon the addition of sulphate of potash and the acid to the brine.

b. Muriate of platina was dropped into a fresh portion of the brine, and allowed to remain for some time, but it gave no precipitate. This when perfectly neutral, is one of the most delicate tests of the presence of potash, and the orange-

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* It being perfectly well known that soda is one of the constituents of the brine, it was needless to prove it by experiment in this place.

† The following are the results of Dr. McNevin's analysis as quoted in the 2nd volume of the New-York Medical and Physical Journal. p. 515.

"Sulphate of Potassa	2.525.
Muriate of Lime	2.269.
Muriate of Magnesia	2.012.
Muriate of Soda	93.194.
	100.000."

The processes by which these results were obtained, have not, to my knowledge, been published; neither are we made acquainted with the precise locality of the spring whence the water was procured.

coloured precipitate which it produces, completely distinguishes the salts of potash from those of soda.

c. Thinking it possible that some of the other ingredients of the brine might affect the power of the above tests, the method recommended by Dr. Thomson was pursued.* A measure full of the water was evaporated to about one half, and lime-water added as long as it afforded any precipitate. The liquid, after filtration, was again concentrated by evaporation, and treated with alcohol, and after another filtration, with oxalic acid, carefully added to avoid excess. The water thus freed of earthy salts was mixed with acetate of lime, but no precipitate appeared either before or after the addition of alcohol, which was a sufficient proof of the absence of both the sulphate of potash and of soda. A portion of the purified liquor was also tested with the muriate of platina, but no precipitate followed.

These experiments are, in my opinion, sufficient to prove that sulphate of potash does not exist in this water; it will hereafter be made evident that the sulphuric acid is combined with lime.

I had therefore ascertained that the following substances were contained in the water under examination, viz.

Carbonic Acid, (free and combined.)
Muriatic Acid.
Sulphuric Acid.
Lime.
Magnesia.
Soda (of course.)

The second object of inquiry was to determine the proportions of these ingredients, and the manner in which they were combined. Two methods of analysis were suggested. 1st, to separate the different substances by various solvents; and, 2d, to determine by precipitants the weights of acids and bases present in the water—to suppose these united in such a manner that they shall form the most soluble salts. These

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* Thomson's Chemistry, vol. iii. p. 182.

salts, according to Dr. Murray, will constitute the true saline constituents of the water under examination.* But the latter method has been found objectionable in many instances, and although on the whole preferable to the former, I did not adopt it altogether.† The course which I pursued was 1st, To determine by precipitants the amount of acids and bases; and, 2d, To determine, by distinct sets of experiments, the manner in which these were combined.

The specific gravity of the brine under examination, was found to be 1.108; which, according to the formula of Mr. Kirwan, would give 151.2 saline contents in 1000 parts of water, or 15.1 in 100 parts. In the present instance this proved nearly correct; for,

A measure of the water, weighing 1000 grains, was evaporated down with much care to dryness; the residuum being well dried, weighed 156. This served as a standard by which to compare the succeeding results.

To the same quantity of water, after being somewhat concentrated by evaporation, muriate of barytes was cautiously added until it no longer yielded a precipitate. The precipitate was washed until the water gave no cloudiness with nitrate of silver; it was then dried at a low heat and found to weigh 10.75. The addition of muriatic acid caused an effervescence, and dissolved a part of the precipitate, denoting the presence of carbonate of barytes. The whole was again washed and dried at the same temperature as before, and upon weighing it, was found to have lost 3.50. This loss may be estimated as the amount of carbonate of barytes, and is

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* Dr. Murray Trans. Royal Soc. Edin. vol. viii. p. 205.

† Thenard, after detailing the methods of analysis by various solvents and that of Dr. Murray, remarks—

"La méthode de M. Murray est bonne, sans doute; mais je ne la crois pas meilleure que l' autre: en effet, celle-ci présente tous les avantages de celle de M. Murray, puis-qu'elle permet de connaitre isolément les quantités de bases et d' acides; elle est même plus générale en ce qu'elle ne souffre point d' exception."—*Traite de Chimie*, iv. 176.

equivalent to 0.77 carbonic acid. 7.25 sulphate of barytes is equivalent to 2.46 sulphuric acid.

To the filtered solution containing all the washings and again concentrated, oxalate of ammonia was added, and at length drop by drop, as long as any precipitate was afforded. The precipitate consisting of oxalate of lime was repeatedly washed, then dried and converted into a sulphate, the weight of which, after being sufficiently heated, was 11.00=4.50 lime.

To the water freed of its lime, carbonic and sulphuric acids, and reduced by evaporation, carbonate of ammonia and phosphate of soda were added. The triple salt, after being washed and dried at a low heat, weighed 5.50, which, according to Dr. Wollaston, is equivalent to 1.12 magnesia.

Having now ascertained the weight of all the ingredients except the muriatic acid and soda, the whole of the water was evaporated to dryness. The residuum, exposed for some time to a moderate heat, was found to weigh 143., which may be set down as muriate of soda =75. soda.

To ascertain the whole quantity of muriatic acid in a given weight of brine, 100 grains somewhat reduced as before, were mixed with nitrate of silver until precipitation ceased. The chloride washed, dried and heated to a red heat, weighed 37.00, equivalent to 6.92 muriatic acid; or 69.20 in 1000 grains.

These experiments, therefore, gave me the following results, as the constituents in 1000 grains of brine, viz:

Carbonic acid	0.77
Sulphuric acid	2.46
Muriatic acid	69.20
Lime	4.50
Magnesia	1.12
Soda	77.00

My next object was to ascertain the manner in which these acids and bases were united together in binary compounds.

Carbonic Acid. Experiment II. satisfied me that this acid was not in combination with soda. That it was not united with magnesia, was proved by the fact that after a portion of

the water had been boiled for some time, muriate of alumine gave no precipitate. It must, therefore, be combined with lime, and this was moreover proved by the following trial.

A measure of the water was boiled briskly for a few minutes. A precipitate now fell down, which being washed and dried, and afterwards submitted to the action of muriatic acid, effervesced and was partly dissolved. This was thrown into distilled water, which, after filtration, yielded a copious precipitate with oxalate of ammonia. We cannot doubt, therefore, that the carbonic acid is combined with lime, and gives 1.79 carbonate of lime.

Sulphuric Acid. Experiment *c* proved that this acid was not combined with soda, and the hydro-sulphuret of strontian satisfied me that it was not with magnesia. It must, therefore, be united with lime. But as the existence of this salt is denied by Dr. McNevin, in his analysis before quoted, and as Dr. Murray supports the opinion, that in most cases in which sulphate of lime is given as one of the constituents of mineral waters, it is formed during the analysis, I was induced to adopt another method to test the correctness of the inference which I had drawn. To a measure of the brine about half its bulk of alcohol, of the specific gravity of .825, was added. A copious precipitate was produced, which when frequently washed to free it from muriate of soda, consisted of sulphate and carbonate of lime.*

I do not conceive that the most strenuous advocate of the formula of Dr. Murray, will now object to the existence of sulphate of lime in the Salina water, particularly as it has been shown that the sulphuric acid is not combined with soda or magnesia, which, with lime, are the only bases present. Great care was taken in this part of the analysis that the con-

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* "Spirit of wine, which will precipitate every salt with the sulphuric acid out of the water in which it is dissolved, if sufficiently concentrated, possesses this power to a remarkable extent with sulphate of lime; for, as Kirwan observes, it will immediately precipitate one grain of this earthy salt out of 1000 grains, or about two ounces of water; and therefore this is a test of considerable delicacy." *Saunders on Mineral Waters.*

centration should not be carried so far as to render the combinations different from those which originally existed in the water. Dr. Murray himself recommends, in all analyses of mineral waters, the previous concentration of the water by evaporation. "This," says he, "renders the action of the reagents which we employ more complete and certain." Now those who have visited the salt works at Salina, Montezuma, or Syracuse, but especially the latter, must have observed that soon after the brine is exposed to the heat of the sun, there is separated a precipitate of a beautiful crystalline structure, which is insoluble in water, unless added in very large quantities. This precipitate, as will hereafter be shown, consists mainly of carbonate and sulphate of lime. A decomposition, therefore, must take place the instant that evaporation commences, or else sulphate of lime, as such, exists in the water; for it can hardly be conceived that a slight concentration of a mineral water produces no change whatever in the compounds of which it is composed, but that as soon as this is carried a little farther, the whole mass is disturbed, and by the operation of the forces of cohesion and affinity new compounds are formed. It is certainly more rational to conclude in reference to the sulphate of lime, that as it requires a large proportion of water to hold it in solution, whenever this is lessened in bulk by concentration, the salt begins to precipitate, and continues so to do until the whole is separated. The amount of sulphuric acid being 2.46, is equivalent to 4.20 sulphate of lime.

Muriatic Acid. As all the lime was not yet accounted for, it appeared probable that the remainder was combined with muriatic acid. This was also made evident by trials with alcohol, in which the muriate of lime is soluble. The amount of lime remaining is 1.76, equivalent to 3.48 muriate of lime.

By previous experiments, I had learned that the magnesia was not combined with the carbonic or sulphuric acids; it must consequently be with the muriatic. 1.12 magnesia is equivalent to 2.57 muriate of magnesia. Deducting 3.20 muriatic acid contained in the muriates of lime and magnesia from the whole amount (69.20,) leave 66.00 in combination with soda, equivalent to 143.50 muriate of soda.

The following therefore are the binary compounds in 1000 grains of the brine.

Carbonate of Lime, - - - -	1.79
Sulphate of Lime, - - - -	4.20
Muriate of Lime, - - - - -	3.48
Muriate of Magnesia, - - -	2.57
Muriate of Soda, - - - -	143.50
	155.54

The weight of the dry residuum from a like quantity of water was - - - - - - - 156.00

The following are the compounds in 100 grains of the dry salt.

Carbonate of Lime, - - -	1.14
Sulphate of Lime, - - - -	2.69
Muriate of Lime, - - - -	2.25
Muriate of Magnesia, - - -	1.54
Muriate of Soda, - - - -	92.38
	100.00

Methods of Manufacture.

Salt is manufactured at Salina and its vicinity in three ways. 1st, By boiling the water in kettles. 2d, By evaporation with artificial heat. 3d, By solar evaporation. I shall notice each of these methods in detail, and make such remarks as may occur upon their comparative advantages.

1st. *By boiling.* The mode pursued in the manufacture of salt by boiling is as follows. From twelve to sixteen iron kettles, such as are used in the manufacture of potashes, are arranged in two parallel rows, and firmly fixed in brick-work over a furnace, constituting what is known as a *block.* These kettles being of a capacity of about 100 gallons, are filled with brine, which is made to boil. As soon as ebullition commences, the water becomes very turbid, and the calcareous salts begin to precipitate. These are repeatedly removed by large iron ladles, which are placed for that purpose at the bottom of the kettles, and are called *bittern ladles.* A propor-

tion, however, adheres to the bottom and sides of the kettles, and after a few days forms a solid coating, called *pan scale*. When the process is properly conducted, this is frequently removed, as its accumulation retards the boiling, and impairs the purity of the salt. Soon after this calcareous matter is deposited, crystals of salt begin to shoot out and sink to the bottom, and this continues until nearly all the water has evaporated. The salt is now removed to proper places for the purpose of draining off the brine, and suffering it to become dry. This completes the work of the manufacturer. The salt made in this way consists of fine grains, more or less hard and pure, according to the care which has been taken in conducting the process.

I should not omit to mention that the Onondago Company have erected a *block*, containing forty-two kettles and pans, with suitable vats and reservoirs; in which works the water is boiled to saturation, when it is drawn off into vats for crystallization. This possesses great advantages over the common method.

Some years since the manufacturers were in the habit of throwing lime into the brine as soon as ebullition commenced, for the purpose, as it was said, of promoting the more ready crystallization of the salt. About this time, also, great complaints were preferred against the purity of the salt; and the employment of this article was generally assigned as the cause. At present its use is probably quite limited, as it has been rendered a penal offence, by a recent act of the legislature. Still, however, it is maintained by manufacturers of great experience, that the addition of lime occasions a more speedy precipitation of the calcareous compounds contained in the water; expedites the manufacture of the salt, and does not, in the least, impair its purity.* This being a sub-

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* "The use of lime to produce the more ready crystallization of the salt, appears to be confined to Salina; for no notice of it is to be found in any of the histories relating to the manufacture of salt, except in a paper by M. Berthier, giving an account of the manufacture of salt, at Moutiers,

ject of some importance, I was desirous to test the correctness of the above statements; and I had a good opportunity of doing so, by observing the effect of lime water upon a portion of the brine. I conceive its operation to be as follows: the lime unites with the carbonic acid, which escapes as soon as ebullition commences, forming a carbonate of lime, which immediately falls to the bottom. The original portion of carbonate of lime contained in the water being thus deprived of the excess of carbonic acid which held it in solution, is also precipitated, and with it, the whole, or a part, of the magnesia. We have then remaining, after these precipitations, lime in solution, (the amount depending upon that which was originally added,) and the muriatic acid which has been freed from its union with magnesia. This acid is probably saturated with lime, and the remaining portion of the latter is either converted into a carbonate and is precipitated, or else is incorporated with the salt. The addition of lime does not, I apprehend, increase the quantity of earthy muriates, and it is to these chiefly that the impurity of salt is to be ascribed.* If

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in France. (*Repertory of Arts, Second Series, Vol. XVII. p.* 231.) It is there mentioned that Gren, a German Chemist, recommended the addition of a cream of quicklime to the brine, under certain circumstances. But the very circumstances stated are sufficient to deter from its use."—*Dr. T. R. Beck's M. S. Report.*

*The principal objection to the salt made by boiling, is the large proportion of earthy muriates which it usually contains. This is chiefly caused by the hurried manner in which the process is conducted. The following quotation from Chaptal is in point.

"Since the suppression of salt taxes," (in France,) says he, "and that the salt trade is laid open, the proprietors of such works dispose of their salt before it has undergone a sufficient degree of purification. It appears to me to be necessary to enlighten the public mind respecting the difference between recent salt and that which has undergone depuration, and been well drained from the brine and bittern.

"Recent salt is bitter and deliquescent, whereas that which has been kept for a length of time, is of a penetrating taste, possesses solidity, and does not deliquesce on exposure to a moist atmosphere.

"Hence it appears that recent salt is not well adapted for preserving meat and similar purposes: it imparts to them not only a bad taste, and

these views are correct, it follows that no great evil can result from the use of a small quantity of lime, provided the boiling be moderate, and sufficient care be taken to remove the deliquescent compounds by washing and drying the salt. But as it was generally employed by those whose only object is to obtain the largest amount of salt in a given time, without any regard to its purity, it is perhaps with propriety interdicted.

It has been observed that the earthy salts contained in this water, precipitate and form a coating to the kettles which should be frequently removed. A specimen of this pan scale of great solidity was analyzed after the manner presently to be detailed. Its composition proved to be as follows, in 1000 grains, viz. :

Muriate of Lime, - - - -	11.
Muriate of Magnesia, - - -	4.
Carbonate of Lime, - - -	60.
Sulphate of Lime, - - - -	688.
Muriate of Soda, - - - -	237.
	1000.

These proportions no doubt vary greatly in different specimens.

2d. *By evaporation with artificial heat.*—The investigations which have at different times been made into the causes of the impurity of the salt made by boiling, has had the effect of bringing into notice less objectionable methods. By these, if ordinary care is employed, salt may be manufactured of as good a quality as that of any other part of the world. The works of Mr. Byington bear a close resemblance to those of Cheshire, in England ; and the salt manufactured there, which is altogether coarse, is of the best kind. The buildings

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vitiates their colour, but prevents their acquiring that firmness which is essential to their preservation. Recent salt is, moreover, subject to great waste during its conveyance to any distance, as it relents in a moist air, and runs per deliquum."—*Chaptal's Chemistry applied to the Arts. Vol. IV. p.* 169.

erected for this purpose are about 130 feet in length, and 50 feet in width. In each of these buildings are three wooden vats, each connected with an iron pan, and these occupy the whole ground, except a few feet at one end. These vats are about two feet deep, and expose a surface of 10,350 square feet of water, and contain, when filled, 105,600 gallons of water, which is kept at a temperature of from 110 to 160 of Fahrenheit. The water is heated by twelve fires, which consume about 180 cords of wood per month, and will produce, in that time, about 4,000 bushels of salt. It requires three men to attend these works; and it is stated that the ashes made in the operation will pay one half the expense of this labour.*

The works of Mr. Rossiter differ somewhat from the preceding, and indeed from any other which I have hitherto seen described. They are situated on the lateral canal, and are calculated chiefly for the manufacture of coarse salt by artificial heat. The water is first introduced into a large cistern, capable of containing 57,000 gallons, where it remains until it becomes transparent. It is then drawn into a lower cistern of 40,000 gallons capacity, attached to the other, and is there rapidly evaporated to saturation. When all the impurities have subsided and the salt begins to crystalize, the pickle is drawn into a side vat or cistern of 100 feet in length, and of 75,000 gallons capacity, and then dried down by a gentle heat. The heat is applied in large iron cylinders from two to three and a half feet in diameter, which run through all the cisterns, and are entirely surrounded by the water. The two preparing cisterns are calculated to hold raw water sufficient for 2,000 bushels of salt, and the salting cistern will hold saturated water sufficient for 3,000 bushels. These works consume about four cords of wood in twenty-four hours, and produce, in summer, about 200 bushels of salt daily—and about 50,000 bushels yearly.

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*Mr. Byington's letter to the Commissioners appointed to perform certain duties relative to the Salt Springs in the county of Onondago, by the Legislature of 1825.

3d. *By solar evaporation.*—The most extensive solar evaporation works are at Syracuse, although there are some also at Montezuma. Of the former, one half is owned by the Syracuse, and the other half by the Onondago Salt Manufacturing Companies. These companies were incorporated under the act of April 3, 1821, authorizing them to expend 50,000 dollars each, in the erection of salt works, which it is believed, will complete for each company, 36,000 feet of vats of eighteen and a half feet wide, making in the whole 72,000 feet in length, capable of producing annually 150,000 bushels of coarse salt.* The vats constructed for this manufacture, are eighteen and a half feet square, and about a foot deep. Of these, there are two parallel rows which communicate with each other; the one being on a level about a foot lower than the other. The whole operation is extremely simple. The brine is conducted by wooden pipes into the upper tier of vats where it remains exposed to the sun until crystals of salt begin to shoot out on the surface. By this time nearly all the lime and other impurities have subsided, and are to be found at the bottom of the vats in beautiful crystals, which are somewhat deliquescent. The brine, thus reduced to saturation, is drawn off into the lower tier of vats, where the formation of salt goes on. It is then taken out and dried, as before, by the heat of the sun; when it consists of large crystals, hard and dry, and of a beautiful white colour. It may be remarked that the evaporation of the water depends greatly upon the state of the atmosphere, and that the process is of course retarded when there is much humidity. But to prevent the embarrassment which would ensue from the access of rains, by the dilution of the brine, covers are constructed for the vats, which run upon rollers, and may be easily moved whenever occasion requires.

The mode just described is certainly less liable to objection than any other, and if properly conducted, leaves no chance for the occurrence of an injurious proportion of fo-

* Report of the Commissioners, &c.

reign substances. All the impurities are allowed to subside in vats other than those in which the salt crystallizes; and as the only dependence is upon solar heat, sufficient time is granted for their complete and total separation.

The crystals found in such abundance, in the upper vats, and which have been before noticed, were submitted to analysis; and were found to consist of the following compounds, in 1000 grains.

Muriate of Lime and Magnesia, -	8.
Carbonate of Lime, - - - -	82.
Sulphate of Lime, - - - -	832.
Muriate of Soda, - - - -	78.
	1000.

Chemical examination of salt.—With a view of ascertaining the relative purity of the salt manufactured in each of the above ways, I submitted three specimens to analysis.* The first made by solar evaporation: the second by evaporation with solar heat, at Byington's works: and the last by boiling in the usual manner adopted at Salina.

Having learned by experiments upon solutions of the salt in distilled water, the nature of the compounds contained in it, I pursued the following method:

1. 1000 grains of salt well dried and pulverized, were treated with alcohol of the specific gravity of 825.:—the earthy muriates extracted and separated, according to the method adopted by Dr. Henry, in his "Analysis of British and Foreign Salts."†

2. The portion of salt which was undissolved by the alcohol, was dissolved in sixteen ounces of distilled water, and the solution filtered; in no case was there any notable portion of insoluble matter left on the filter.

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* This analysis was made at the request of the Commissioners, appointed for the before mentioned purpose by the Legislature of 1825; and the result published in their report.

† Repertory of Arts, Vol. XVII. second series.

3. To the filtered solution, carbonate of soda was added, and the liquid briskly boiled for a few minutes, and then again filtered. The carbonate of lime left on the filter, was washed and dried; its weight indicating the quantity of sulphate of lime which had been decomposed.

4. The filtered solution was neutralized by muriatic acid, and muriate of barytes was added till it ceased to yield any further precipitate. The weight of the sulphate of barytes proved that no other sulphate existed in the salt.

The salt made by solar evaporation at Syracuse contains, in 1000 grains,

Muriate of Magnesia,	2
Sulphate of Lime,	7
Muriate of Soda,	991
	1000

The salt made at Byington's works, contains, in 1000 grains,*

Muriate of Magnesia,	1½
Muriate of Lime,	1
Sulphate of Lime,	9
Muriate of Soda,	988½
	1000

The salt made by boiling in kettles, contains, in 1000 grains,

Muriate of Magnesia,	3
Muriate of Lime,	6
Sulphate of Lime,	11
Muriate of Soda,	980
	1000

* Mr. G. Chilton of New-York, one of our most accurate chemists, analyzed a finer specimen of this salt, and found it to consist of the following compounds in 1000 grains.

Muriate of Magnesia,	½ gr.
Sulphate of Lime,	5½
Muriate of Soda,	994
	1000

It may not be improper to introduce the following table from Dr. Henry's paper above quoted; as it will exhibit the component parts of several varieties of foreign salt, and enable the reader to estimate the great purity of that at present manufactured in our own State:

1000 parts by weight consist of

KINDS OF SALT.		Insoluble matter.	Mur. of lime.	Mur. of Magn.	Sulphate of lime.	Sulphate of Magn.	Pure Mur. of Soda.
Foreign Bay Salt.	St. Ubes,	9	a trace	3	23½	4½	960
	St. Martins,	12	do.	3½	19	6	959½
	Oleron,	10	do.	2	19½	4¼	964¼
British salt from Sea-water.	Scotch (common.)	4	—	28	15	17½	935½
	Scotch (sunday.)	1	—	11½	12	4½	971
	Lymington (common.)	2	—	11	15	35	937
	Lymington (cat.)	1	—	5	1	5	988
*Cheshire Salt.**	Crushed rock,	10	1/16	1/16	6½	—	983⅛
	Fishery,	1	¼	¾	11¼	—	986¾
	Common,	1	¼	¾	14½	—	983½
	Stored,	1	¼	¾	15½	—	982½

ART. IV. *A description of the White Sulphur Springs of Virginia, with some observations on their medicinal properties.* By S. C. FARRAR, M. D. of James Town, Virginia.

THE white sulphur springs, so called from the immense deposit of white sulphureous matter, are situated in Greenbrier county, on the great western road leading from Washington city to the western and south-western states. These springs have for many years been resorted to by invalids from most of the states in the union, and the efficacy of the water in bilious and hepatic affections has long since been established by the concurrent testimony of thousands. It would be as tedious as unnecessary to detail the many remarkable cures effected by this water. Let it suffice to say, its beneficial effects have been most frequently and clearly evinced

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* Repository of Arts, vol. xvii. second series, p. 221.

in chronic hepatitis. We shall not claim for it any power to remove hepatic affections dependent on structural disorganization; for this, when once commenced, and advanced to a certain point, is beyond the reach of all remedial agents. But we believe that in most, if not in all the cases of chronic hepatitis, of a functional character, which have not been of such duration as to have involved seriously other important organs, it acts almost as a specific. And the instances of failure we think are more attributable to the imprudence of visitors than to any other cause. To derive benefit from this water, it is essentially necessary for invalids to exercise that strict control over their propensities and appetite, which in most cases of chronic disease is rigidly enforced by practitioners of medicine, and without which the most judicious prescriptions, and the clearest and most accurate views of disease avail nothing. We will now proceed to lay down a few general rules for the government of those who may henceforth visit these springs. We will first notice its effects. It acts not only as a *cathartic*, but as a *diuretic* and *sudorific;* and hence its efficacy in some cases of tonic dropsy, and in most cutaneous diseases. But it is invariably cathartic if used at proper *times*, and in *proper quantities*, preceded by calomel.

1st. It frequently happens in chronic hepatitis, (especially in its early stage,) that the liver and bowels are both exceedingly torpid, and refuse to respond to ordinary doses of cathartic medicines; in such cases, we would always advise the exhibition of a mercurial dose the night preceding the use of the water. From two to six grains of calomel may be taken according to the degree of constipation, and the next morning from five to eight glasses of the water, at intervals of twenty or thirty minutes.

2dly. When the bowels are very torpid, it will always be most advisable to take two glasses in quick succession, and then wait twenty or thirty minutes, and so on until the necessary quantity has been taken. From inattention to this, we are confident the expectations of the invalid have been frequently blasted. We have often remarked, that a single glass taken in a constipated state of the bowels, would act as a diuretic or

sudorific, whereas two glasses drank in quick succession, and repeated as above directed, would generally act on the bowels. And when once moved by the calomel and water, may then be kept for some time in a soluble state by the water alone. We say *for some time*, for it occasionally happens, that after a certain period, the bowels become less susceptible to its influence, are partially constipated, and head-ache with most of the symptoms attendant on confined bowels, with defective secretion of bile, supervene. To remove these symptoms, we have with great benefit directed calomel or the blue pill in two, three, or four grain doses every night, or every two or three nights, according to circumstances, and the water next morning.

3dly. We must caution visitors against the use of the water throughout the day as common drink; for, strange to say, habit, in the use of this, as of many other disagreeable things, in a short time renders it quite palatable and agreeable. It ought not, in our opinion, to be taken oftener than twice a day. After eating an early and light supper, we have been in the habit on retiring to bed of drinking two glasses, and the next morning from four to eight at intervals, as above directed. When thus managed, we have seldom been disappointed in its effects.

4thly. It is not only important that abstemiousness be attended to by the invalid in relation to supper, but to all other meals. The frequent and free use of pastry and high-seasoned dishes, cannot be too much reprobated; against them we would caution every person labouring under chronic hepatitis, who expects, and wishes to be benefited by the use of the white sulphur water. We must also enter our solemn protest against the common and fashionable practice of mingling various discordant articles of diet in the stomach. For every invalid may, by a little attention, if his diet be simple, soon ascertain with much more precision, what will agree with him, than the prescription of the most enlightened physician can point out. Hence then the necessity of trying separately various articles of diet, by which those most digestible will be discovered. It is folly to attempt to lay down

any particular regimen adapted to all chronic cases of the same kind. An article of diet easily digested by one person, may prove quite offensive to another; this frequently happens in regard to medicine, and is equally true in relation to diet.

5thly. We would recommend in addition to the use of the water, early rising and exercise on horseback or in a carriage; the former is best for persons affected with chronic hepatitis. We would also caution visitors against the common practice of sitting under the trees after the dew begins to fall,* and would recommend the necessity of fires in the mornings when the air is cool and damp.†

We regret our inability to give an account of the different substances contained in the water, it having been subjected to no correct chemical analysis; that it contains sulphur and lime in large proportions, is most evident, also sulphuretted hydrogen gas, and it is probable some magnesia. Should this paper be the means of improving the health of a single suffering human being, the author will be amply compensated for having written it.

ART. V. *Account of a Case, in which the rudiments of a Fœtus were found, on dissection, in the uterus of a Child between three and four years of age.* By Dr. ELBERT CURTIS, of Tompkins County, New-York.

ON Nov. 15th, 1825, Dr. Daniel L. Mead of Caroline, and myself, were called upon to dissect a little girl who had died on the 14th, aged three years, nine months, and ten days, by the name of Abigail Walton, in the town of Caroline, Tompkins County, New-York. We arrived at the house thirty-two hours after death: after taking off her covering, her appearances were unnatural for one of her age: a very large tumid abdomen, the mons veneris covered with a growth of hair

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* The dews here are exceedingly heavy.

† The mornings are generally foggy, and the air damp until some time after the sun has risen.

equal to an adult, her features much enlarged, and a greater growth of hair on the head than common.

On opening her abdomen, we found the womb occupying the whole left side, crowding the stomach and spleen firmly against the diaphragm, and the latter considerably forced upwards against the lungs; the intestines all in the right side, the vagina attached, &c. apparently undisturbed. The whole contents of the abdomen looked natural, except the liver, which was a little indurated, and the left kidney appeared as though there had been inflammation, and was firmly attached to the womb: we took out the womb and kidney together. The kidney was distinct, and on opening it we found the inner texture much destroyed and purulent. The womb was also purulent, of a dark hue and irregular form; it was twelve inches in length, the superior part being five, and the inferior three inches in diameter. It partook somewhat of the shape of an hour glass, and weighed four pounds ten ounces.

On opening into the womb, there was a mass of congealed variegated matter, but without any very disagreeable smell: on making a deep incision, we found the vitals of a human subject, such as heart, lungs, diaphragm, brain, with its enveloping membranes; the abdomen filled with a dark mass, particularly in the right side, supposed to have been a liver. No appearance of bone in any part; but the inner surface of the sacrum appeared natural, and on passing the finger over the spinous part, it felt hard like cartilage, and much like the sample before us.

The heart about as large as half of a hen's egg, with auricles, ventricles, and foramen-ovale; the lungs in separate lobes, and the diaphragm entirely arched. The brain was enclosed by a firm membrane, and its different lobes were quite evident. No features or limbs could be discovered; but the parts above mentioned were naturally situated in relation to each other and to the whole: the head occupied the cervix of the womb, and was in a perfectly natural situation before we disturbed it, or such as is, and would be natural in an adult person; leaving not a doubt in our minds, that

circulation must have gone on in the ordinary way between mother and fœtus in utero. What we could learn from the parents and connexions before her death, was this: She was born February 4th, 1822, with no other appearances, except a little enlargement of her privates, and a small growth of hair about them (to use their words). Nothing farther was noticed till the summer or fall of 1824; she was then a little unwell, complaining of her bowels, and as they thought troubled with worms, for which they gave her some medicine, without finding much relief. From that time her abdomen enlarged until her death, though not suffering much till September last; the pains would then last a few minutes at irregular periods; in the interim she would amuse herself with other children, and be quite cheerful, though very clumsy.

We each of us saw her before death, and after being made acquainted with her symptoms and appearances, concluded it an anomalous case beyond the power of medicine. Her abdomen was very large just before death, and on examining, we found a hard tumour in the left hypochondriac, also one in the hypogastric regions, though not very tender on pressure; her features and voice were like those of one that had passed the age of puberty; when standing, she had quite a majestic, or strutting appearance; when fatigued or tired of standing, she would squat down on her feet, bringing the parietes of the abdomen against the thighs—and when she lay down, would turn on her face and abdomen, always resting in one of the two positions. On the morning of the 14th November last, she cried out with pain, and expired in about five minutes after first complaining, without any previous warning of immediate dissolution.

ART. VI. *Contributions in Medical Jurisprudence and Police.* No. II. By THEODORIC ROMEYN BECK, M. D. Professor of the Theory and Practice of Physic, and Lecturer on Medical Jurisprudence in the University of the State of New-York.

Results taken or deduced from the Census of the State of New-York for the year 1825, *as communicated by the Secretary of State to the Legislature, Feb.*4, 1826.

POPULATION, DEATHS, BIRTHS, &c.

THE population of the State of New-York, according to the United States census in 1820, was		1,372,812
The population of the State of New-York, according to the State census in 1825, was		1,616,458
Of these,	822,897 were males.	
	793,561 were females.	
	1,616,458	
If we allow the increase of population from 1820 to 1825, to have been regularly progressive, we shall find the population of 1824, to have been		1,567,728
(This is probably not perfectly accurate, according to the computation usually adopted in such cases, but I have preferred it, because in its application to succeeding results, it makes against any too favourable deductions.)		
Whole number of married females under 45 years in 1825,		200,481
Whole number of unmarried females between 16 and 45 in 1825,		135,391
Whole number of females under 16 in 1825,		361,624
Whole number of marriages in 1824,		11,553
Whole number of births in 1824,		
	Males 31,514	
	Females 29,869	61,383
Whole number of deaths in 1824,		
	Males 12,525	
	Females 10,019	22,544
Excess of births over deaths in 1824,		38,839

Counties.	Number of Deaf and Dumb.	Number of Idiots.	Number of Lunatics.	Proportion of Deaths in 1824.	Counties.	Number of Deaf and Dumb.	Number of Idiots.	Number of Lunatics.	Proportion of Deaths in 1824.
Albany	24	44	20	one in 55	Onondaga	14	29	18	one in 79
Allegany	8	22	5	do. 70	Ontario	16	36	7	do. 68
Broome	5	17	6	do. 72	Orange	17	47	32	do. 75
Cattaragus	7	4	6	do. 83	Orleans	8	8	2	do. 47
Cayuga	25	68	18	do. 83	Oswego	1	9	11	do. 69
Chatauque	8	19	2	do. 86	Otsego	26	46	24	do. 83
Chenango	6	33	10	do. 66	Putnam	2	9	4	do. 87
Clinton	12	12	6	do. 89	Queens	9	13	12	do. 68
Columbia	12	53	18	do. 88	Rensselaer	13	26	30	do. 66
Cortland	4	15	5	do. 89	Richmond		4	2	do. 63
Deleware	11	38	12	do. 77	Rockland		9		do. 81
Dutchess	8	49	22	do. 77	Saratoga	13	41	23	do. 77
Erie	9	13	9	do. 70	Schenectady	4	7	9	do. 70
Essex	4	11	1	do. 76	Schoharie	14	31	10	do. 72
Franklin	5	5	6	do. 81	Senecas	4	12	6	do. 73
Genesee	17	29	12	do. 74	St. Lawrence	10	21	12	do. 92
Greene	15	34	15	do. 95	Steuben	14	26	12	do. 67
Herkimer	12	48	15	do. 78	Suffolk	7	21	13	do. 72
Jefferson	18	31	13	do. 83	Sullivan	1	12	1	do. 84
Kings		4	6	do. 65	Tioga	2	22	6	do. 97
Lewis	5	9	6	do. 103	Tompkins	17	21	10	do. 81
Livingston	6	17	5	do. 82	Ulster	19	41	16	do. 74
Madison	12	23	15	do. 89	Warren	4	6	1	do. 72
Munroe	8	23	8	do. 64	Washington	25	48	35	do. 74
Montgomery	55	77	38	do. 68	Wayne	23	16	6	do. 55
New-York	56	46	193	do. 52	Westchester	4	40	26	do. 85
Niagara	5	13	2	do. 51	Yates	2	17		do. 76
Oneida	19	46	17	do. 83					
					Total	645	819	1421	

There are some results obtained under each of these, which deserve mention.

DEAF AND DUMB.

The act directing an enumeration to be taken, ordained that the whole number of Deaf and Dumb, Idiots and Lunatics, should be ascertained, together with their sexes, ages, and circumstances. It appears, however, that with the first of these, (the deaf and dumb) inquiry was only made concerniug such as were under twenty-five years of age. All above that period of life are usually considered as beyond the power of instruction, and the census was probably limited for this reason. There is a strange discrepancy between the individual returns of the marshals and their total amounts; one

can hardly look at the table for a county, without believing that there has been carelessness. Thus, for example, although a total of 645 Deaf and Dumb are returned under the age of 25 years, yet, on comparing the columns in which the ages are distinguished, we find they do not agree with the required number.

Under 10 years of age,	Males 68,	Females 67	135
Between 10 and 25 years,	Males 221,	Females 213	434
			569
Of these, there are,		Paupers 141	
Able to support themselves,		387	528

The proportion of Deaf and Dumb to the whole population, is one in 2,506

It should be added, that there are Asylums for these unfortunate beings in the Counties of New-York and Montgomery. This will explain their disproportionate number.

IDIOTS.

The whole number of these amounts to,			1,421
Under 21 years,	Males 336,	Females 321—657	
Above 21 years,	Males 397,	Females 322—719	1376
	Paupers,	442	
	Not Paupers,	459	901

Proportion of Idiots to the whole population, is one in 1,137.

LUNATICS.

The whole number is,			819
Under 21 years,	Males 33,	Females 27—60	
Above 21 years,	Males 373,	Females 356—729	789
Paupers,		184	
Not paupers,		263	
Confined in jails for offences or safe keeping,		24	471

Proportion of Lunatics to the whole population, is one in 1,973.

MORTALITY.

Taking the population of 1824 to be as I have stated it, 1,567,728, the proportion of deaths will be one in 69. The Secretary of State, however, in his caculations, (quoted in the above table) compared the deaths in 1824, with the population of 1825, and the result thus obtained, is one in 75½.

The county of Orleans appears to have the greatest number of deaths, the proportion being one in 47; and Lewis County the least, the proportion being one in 103. I am not aware of any local causes that can have produced the first result, but I was, I confess, astonished to find that New-York was not the unhealthiest, as it is the seat of our metropolis, and the causes which produce mortality, have been generally deemed most active in large cities like it. According to the population returns of Great Britain in 1811, the mortality in the county of Middlesex (in which London is situated) was one in 36, while the county of Cardigan was the healthiest, the proportion being one in 73. The mean of all the counties of England was 49, and that of all the counties of Wales was 60.*

Albany, April 28th, 1826.

ART. VII. *Some Observations on the Diseases of the Spanish Main, in an extract from a letter to one of the Editors.* By JAS. H. C. MILLER, M.B. of the Colombian Navy.

IN looking over the Medical Repository, Hexade 2d, vol. 2d, I find a communication relative to the geography and diseases of the Spanish Main. The general correctness of the writer, shows him to have been familiar with that coast; yet some of his statements seem to require explanation, and others correction. That *Chagres* and *Porto-Bello* are especially unhealthy, is strictly true,—the former perhaps is even the most unhealthy situation on the western continent,—but that it arises from the "fogs" or "stagnant water,"

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* Young's Introduction to Medical Literature, 2nd ed. Lond. p, 604.

is doubtful, because, first, there is really but little stagnant water in all the region, the almost constant rains being drained off to the sea with current sufficient to prevent any passing putrefaction; and secondly, the sun, as he says, being generally obscured with the fogs, little miasma can be formed. Moisture, not constant rain, tends to the generation of malignant disorders; and the presence of the sun, for a considerable time, (which can hardly be said to be the lot of Chagres) is also, in some measure, required. No, it is rather to the internal economy of this town, and also Carthagena, Santa Martha, Panama, and Porto-Bello, that we are to look for the causes of their disorders. Chagres is the dirtiest place which can be conceived: and this character will also apply to the city of Panama. Perhaps the "fogs," *though saline*, may have some influence.

With regard to the existence of the real Leprosy on the Main,* I am quite certain he is mistaken. A disease prevails among the native inhabitants of South America, which

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*In relation to the diseases of the Spanish Main, the writer alluded to by our correspondent, makes the following statement:—Ed.

"The prevailing diseases in this country are: 1st. The leprosy, which all the inhabitants are more or less afflicted with, and strangers, soon after their arrival, are attacked by it, particularly at Porto-Bello. I imputed the cause of this loathsome disease to the water, which descends from the mountains by a natural aqueduct into the town, and from thence to the sea, and of which the inhabitants drink freely, seldom mixing with it any kind of spirits. It is extremely cool and pleasant, and of a clear bluish cast.

"Secondly. A disorder, called by the Spaniards, dolor-acostado, or pain in the side, which, when sitting on the right side, affects the liver, and when in the left, forms a hard lump, which attaches itself to the side, and generally terminates in death. This is occasioned (say the Spanish physicians) by a concentration and stagnation of the blood in the part affected. The extreme pain it gives the patient as the disorder increases, occasions a violent fever. For this complaint they give strong purgatives, bleed profusely, aud rub the part affected with warm tallow, as likewise the extremeties of the body, which produces violent perspiration—they sometimes make an incision in the side for the matter collected to discharge itself.

"Thirdly. Pulmonary complaints are frequent.

consists of ill-conditioned ulcers;—the Spaniards call them *llagas;* these prevail greatly about the legs below the knees, though they occasionally exist on all parts of the body. I have seen the same tendency to ulcerations in some regions of the United States. On the Main, the seamen in the ports also have these ulcers, but in their cases they have a scorbutic origin. The hospitals have always a large proportion of patients with these *llagas.* I have seen much of it; it is loathsome enough, but it is very far from being the true *lepra orientalis.* Mr. K——ll describes truly the tendency of the disease; he only mistakes somewhat its real family. Among the creoles on shore, it arises from a general diseased habit of body, *not in any wise specific;* and in these and other cases often depends on varicose veins and relaxed solids.

I am happy to observe some other has taken notice of a disorder as peculiar to this region. I mean in regard to what he says of the fatality of congestions when they happen in the left side, (or in other words, the spleen.) I say to observe that another confirms the existence of a disorder which I feared rested solely on my reports. The term *dolor acostado,* which he has given them, however, is what the Spaniards apply to pneumonic diseases.

I conclude *bilious fevers* to be much more severe at Chagres, than places more to windward. Indeed the yellow fever may

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"Fourthly. Bilious fevers, which are the prevailing disease in that country, and generally come to a crisis the seventh or ninth day. If they do not terminate in death, the patient is left extremely weak and debilitated, and remains a long time in a convalescent state; indeed, seldom recovers perfect health without change of climate. The remedies prescribed for this disorder are strong purgatives, profuse letting of blood, injections, and bark, when the fever subsides. They recommend a thin broth, made by the boiling of a fowl in water, barley-water, &c. for constant drinks; and will not suffer the patient to eat any thing while the fever is upon him, but allow him to drink as much water as he pleases. The part most affected by this disorder is the head."—*Med. Repository,* vol. viii. p. 130.

almost be said to be endemic to those towns on the isthmus. It is almost always there in every season.

I have not seen many *pulmonary disorders* either there or in the other stations on the coast; yet such is the peculiar moisture of the isthmus *in particular*, I do not think their occurrence improbable.

ART. VIII. *Account of a Case of Encysted Tumour, successfully removed by an operation.* By ALEXANDER H. STEVENS, M. D. one of the Surgeons of the New-York Hospital.

[With a Plate.]

THE extirpation of encysted tumours is sometimes among the most difficult of surgical operations. A complete removal and destruction of the cyst is, I believe, necessary to a perfect cure. I saw an instance some years since of a tumour of this kind situated over the vessels on the inner side of the thigh, which, after an imperfect removal, grew again to the size of a child's head, opened, and discharged a thick viscid matter, that gradually diminished in quantity, and the tumour shrunk to the size of a nut. It then enlarged again, and went through the same changes as before, and thus for several times, each occupying six or eight months. We see a reason for this phenomenon in the structure of the inner surface of the sac. It is smooth, and polished, and not unlike a mucous membrane, and therefore not capable of adhesion. Sir Astley Cooper advises the sac in some cases to be torn out; this is a very expeditious and practicable method in many cases of small encysted tumours, especially those about the eyelids: but where they are large, that part which receives the nerves and vessels, and where alone in general the knife requires to be handled with caution, can be separated only by the knife.* Baron Boyer proposes the applica-

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* The following paragraph, from Mr. Allan Burn's work on the Surgical Anatomy of the Neck, edited by Professor Pattison, page 115, will not, I think, be considered by practical surgeons as containing proper directions for the removal of tumours in the neck. "Let therefore no one resolve on

tion of caustic substances to the surface of any portion of the sac which cannot be removed by the knife. I should hesitate to apply caustic to a part where the knife could not be used with safety; but where the patient is steady, (and in adults at least where the surgeon is composed, the patient is rarely otherwise,) I have yet to learn that any encysted tumour whatsoever, not situated in one of the great cavities, may not be completely detached without injury to any important parts with which it may be connected. Without further preface, I send you a sketch of a tumour of this kind taken by my friend John I. Graves, M. D., and an account of the operation by my pupil Mr. Samuel Boyd, jun.

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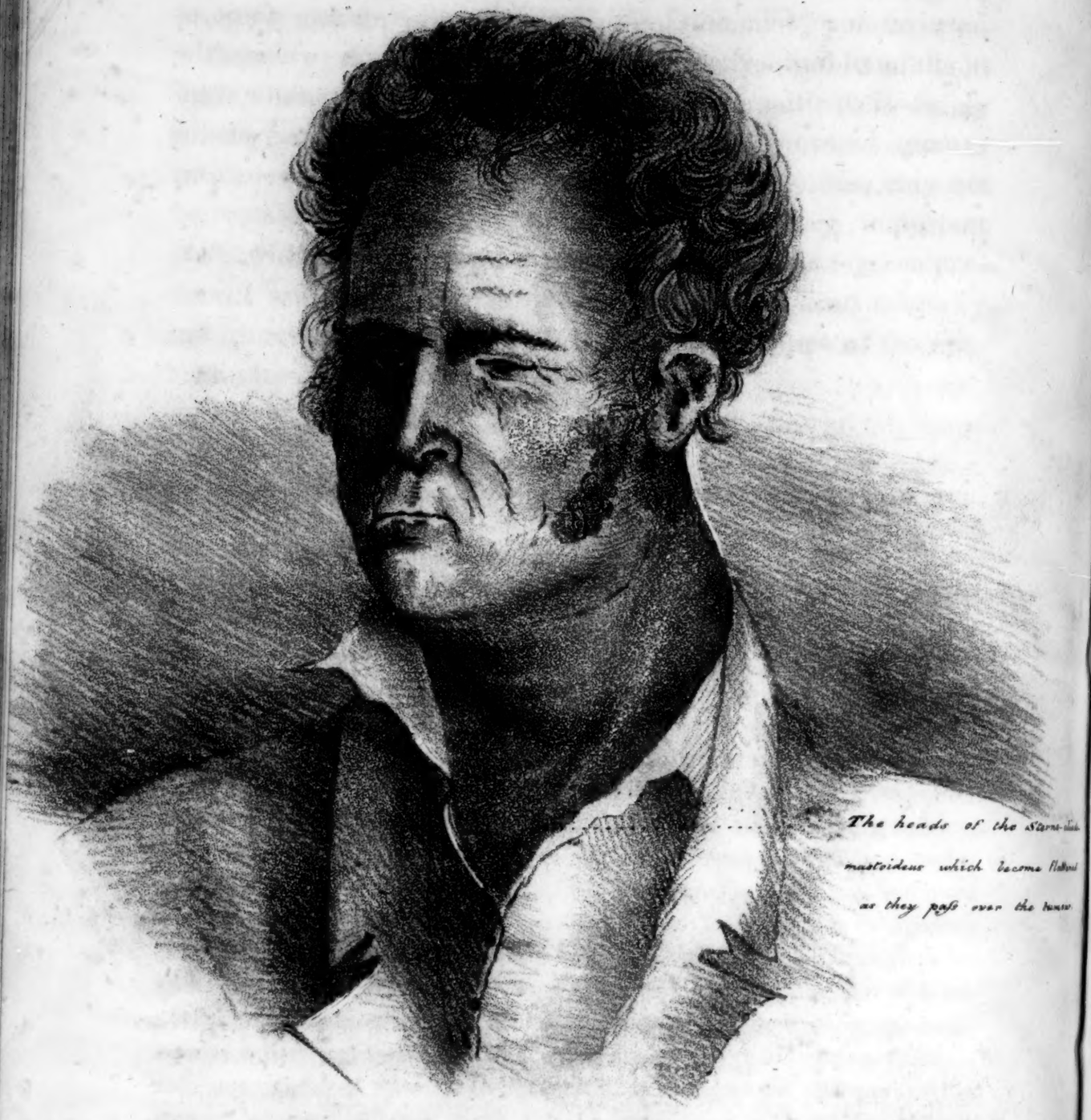
the removal of any tumour from beneath the fascia at the side of the neck, till he has previously ascertained all its connexions. If these be found such as to warrant an operation, let not procrastination destroy the hope of the patient. Proceed without delay to its extirpation, place the patient in a proper position, make then an incision through the integuments, the platysma myoides and the fascia, down to the tumour, which next expose by dissecting back the parts which cover it. Now lay aside the knife, act with boldness and decision, grasp the tumour firmly with the fingers and thumb of the right hand, ascertain that the hold is secure, and instantly and steadily wrench it from its attachments behind. This if executed with proper rapidity, is not more painful than the more tedious removal with the scalpel would have been, is seldom followed by bleeding, and is infinitely less dangerous; indeed so fully convinced are the best and most expert surgeons of the truth of this, that few of them now, in extirpating tumours from the neck and axilla, employ the knife after the external incision has been made." I apprehend the forcible wrenching out of a tumour, except it be a very small one, is not so easy or so safe, or so common as is here represented. I have never seen a large tumour so removed, and have employed in order to tighten the parts by which the part of the tumour adhered, as much force as it seemed possible to employ without danger of lacerating, not the connexions of the tumour alone, but large vessels consolidated with those connexions by pressure and consequent adhesion, and which yet by a nice dissection might be safely separated from them by the knife. I have offered the case of Mr. T. as illustrative of the method that appears to me most safe for the removal of encysted tumours critically situated. In removing unencysted tumours, the edge of the knife should be directed towards the centre of the tumour itself, not towards the parts below the tumour.



An encysted tumour on the neck of W. T.
Sketched by J. B Graves M. D. the
day before it was removed by

Dr STEVENS.

Imbert's Lithography.

Mr. T., of Hempstead, L. I., a robust man, of sixty years of age, consulted Dr. A. H. Stevens on the 2nd of June, 1826, on account of a tumour on the left side of his neck. It occupied the triangular space between the mastoid process, the symphysis of the chin, and the clavicular origin of the sterno-cleido-mastoid muscle, which passed over the centre of the tumour, and bound it down. The tumour was about four inches in diameter, and externally, except a slight flattening in the part where this muscle pressed against it, it was nearly spherical, equable, not hard, and obscurely fluctuating. Discouraged by the advice he had received for several years, from submitting to an operation, he was now resolved upon the hazard, from finding that it was increasing in size, and pressing upon the œsophagus and trachea.

He stated that he first perceived the tumour after a slight indisposition twelve years since; it was then little larger than the end of his thumb. It remained stationary four or five years, after which it was attended occasionally with darting pains, and gradually enlarged until about two years since, when its growth began to be more rapid.

Dr. Stevens performed the operation on the 3rd of June, in the following manner. The patient being seated on a chair, and resting the right side of his head on the breast of an assistant, two semi-elliptical incisions were made through the integuments, and platisma-myoides, which intersected each other at the lower point of the mastoid process, and at the bottom of the tumour. One of these incisions passed close behind the external jugular, the other skirted the front edge of the mastoid muscle. Some progress was made in the dissection, when it was found necessary to tie, and cut the external jugular, and to divide some of the fibres of the mastoid muscle. The tumour was then opened, and half a pint of thick yellow matter was discharged. The next step in the operation was to cut carefully down to the arteries, under the angle of the jaw, and place ligatures around them, before they were divided. Doctor Stevens then introduced the fore and middle finger of the left hand into the sac, and grasping it between them and his thumb, cut upon the outer side of the sac itself,

his fingers enabling him to avoid cutting through it; and in this manner a careful dissection during three quarters of an hour, enabled him to remove the sac entire, and in one portion, without injury to the important parts which were so intimately connected with the tumour. When the surface of the wound was cleansed of blood, and the small arteries secured, we saw the digastric muscle and the ninth pair running below the jaw, and the descending branch of the ninth pair running over the sheath of the carotid, and the internal jugular vein covered only by its sheath. A large vein formed by the union of the lingual and pharyngeal veins had been cut into a little way above its entrance into the internal jugular, and was bleeding from each end, a ligature was applied above and below the opening, and the wound was then united with three interrupted sutures, and intermediate strips of adhesive plaster. The wound healed rapidly without any untoward occurrence, and on the fourteenth day after the operation, the ligatures had all separated, the wound was nearly closed, and Mr. T. returned to his residence on Long Island.

ART. IX. *Account of a remarkable Case of injury of the Heart, in a letter to* THEODRICK ROMEYN BECK, M. D. Professor of Medical Jurisprudence, &c. By ALEXANDER H. STEVENS, M. D.

[Communicated by T. R. Beck, M. D]

A young man in a scuffle received a punctured wound from a needle that was sticking in his jacket. The needle was one inch and a quarter in length. It entered the integuments on the left side of the chest, about two inches from the axis of the sternum, one inch above the level of the left nipple, just below the fourth rib. The needle was buried in the chest, its head going foremost. The man was separated from his antagonist, and a medical gentleman, who happened to be passing, drew the needle out. He was yet in good heart, and desirous of renewing the battle, although some minutes had elapsed since the accident, the exact time of which he was not conscious of. In about ten minutes he began to grow faint—fell, and was brought to the hospital, where I found him two hours

afterwards lying insensible on his left side; pulse scarcely perceptible at the wrist, the skin cold, pale, and moist; eyelids closed, and pupils dilated. When roused, he evinced great uneasiness and oppression in the seat of the wound, unwillingness to be disturbed, and extreme anxiety when any attempt was made to turn him on his back. The external appearance of the wound was that of a defined circular ecchymosis, about one quarter of an inch in diameter. My opinion of the case was, that the internal mammary artery was wounded, and that it was pouring out blood in the anterior mediastinum, which formed a sac that pressed upon the heart and lungs. My friend Dr. Willet, the house surgeon, at my request, opened a vein in the arm; three ounces only could be drawn—no apparent effect followed this measure. After some reflection, I was making preparations to open the mediastinum, when the man died.

It was found on examination after death, that the needle had passed less than one-sixth of an inch within the internal mammary artery, between it and the edge of the sternum. The pericardium itself was enormously distended with dark-coloured blood; the outside of the pericardium had been punctured in ten or twelve places within a circle of an inch in diameter; the punctures had evidently been made by the beating of the heart against the head of the needle, and the right ventricle of the heart was lacerated on the upper and anterior surface, and presented a perforation large enough to admit an ordinary probe. The right side of the heart was empty, the left distended with blood.

The operation of trephining the sternum was performed successfully by Galen, and is very amply treated of in the elegant memoir of Monsieur de la Martiniere, in the twelfth volume of the 12mo. edition of the Memoirs of the French Academy of Surgery. La Martiniere performed the same operation, and cites several cases of its success. I have myself removed a large piece of the sternum, carious from syphilis, in the case of a distinguished military officer. There is every reason to believe that a wound of the internal mammary artery would require such an operation, and that it

might be practised with success. In one of La Martiniere's operations, the internal mammary, after having been divided, did not require a ligature, but was prevented from bleeding by a dossil of lint.

The proposal to open the anterior mediastinum to evacuate blood, and to secure the internal mammary arteries has not, so far as I am aware of, hitherto been made. Were I to meet with another desperate case in which I had as strong reason to believe it wounded, as in the foregoing, I should not hesitate to do it.

I have addressed this case to you as interesting in a medico-legal point of view, as proving how suddenly death may be produced by a puncture of the chest with a scarcely perceptible external wound. In a physiological point of view, the case is also interesting, as showing the small degree of sensibility in the heart, its proximity of the heart to the parietes of the thorax, and its alternate approach and separation from them.*

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* *History of a boy whose breast-bone was cut out, and his heart exposed. From Skenkius Obs. Med. Fol.* 1609, p. 291.—Translated by Eugene Weld.

A boy, (the son of Marulus Mymographus,) receiving a blow on his breast while wrestling, was at first neglected, and afterwards entirely cured. After four months, pus appeared in the wounded part, and the physician thinking to put a stop to this, made an incision; and as he expected, the wound quickly cicatrized; afterwards inflammation appeared, and suppuration commencing, another incision was made, but no cicatrix could again be produced. Afterwards his guardian having called a consultation of physicians, (among whom I was included,) desired us to deliberate upon his case. And when mortification, or what the Greeks call sphacelus, appeared to us, to be the complaint under which he laboured, there appearing also to be a motion on the left side of the heart, no one dared to extract the diseased bone, for they thought that it necessarily involved an opening into the thorax. But I engaged that I would operate without making a perforation in the thorax, but promised nothing relative to the absolute cure, since it was uncertain whether any of those parts situated within the breast were diseased. The parts being then examined, and no farther injury appearing than at first, I more confidently undertook the operation. Although the parts to which the arteries and veins were attached appeared entirely sound on each side, when I had removed the affected bone from that part upon which the vertex of the pericardium rested, and

ART. X. *Account of a Case of Monstrosity.* By JAMES FITZPATRICK, M. D. of Lebanon, Pennsylvania.

WILLIAM LEWIS, ætat. six years, has a deficiency of the frontal bone, commencing about one inch above the superciliary ridge of the right side. Through this, which with propriety may be called a fissure, a portion of the brain protrudes, covered by the integuments, and, I apprehend, by its meninges, from the strong perceptible pulsation, and which is increased in volume upon the least exercise and slightest indisposition. The size of the tumour at birth was as large as a hickory nut, and at present is equal to that of a hen's egg, with its apex above, and its base below, measuring with a line drawn, commencing at its superior, and terminating at its inferior extremity, about two inches. It descends midway between the internal and external angular processes, measuring transversely about two inches over its surface; vision is entirely destroyed, not from the pressure of the tumour obstructing the rays of light, for the levator palpebræ muscle and its antagonist seem to act with considerable power in the elevation and depression of the eyelid; but from some disorganization in its internal structure; the cilia of the superior eye-lid is also wanting, with the exception of a small portion situated at the external canthus. The boy has enjoyed unexceptionable health since his birth; but whenever slightly indisposed, there is such a determination of blood to the head as to occasion delirium; his complexion is florid, rather of a sanguineous temperament, appetite good, and his digestive powers vigorous; he goes to school, and is remarkable for possessing strong mental faculties, surpassing those of his classmates. From the report of his mother, his entrance into

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when the heart was exposed to view, and its envelope was entirely decayed, then entertained but little hopes, nevertheless he was entirely cured in a short time, which would not have taken place, if no one had dared to have extracted the diseased bone. And no one would have operated unless previously acquainted with anatomy.

the world was tedious and difficult, although in her three former accouchments she had easy labours, and not protracted beyond six hours, but when confined with him, her pains were almost intolerable, and continued until the delivery was completed, which exceeded forty-eight hours. The cause of the difficult and lingering labour when the child was born was evidently developed; for upon examination of its head, the anterior and posterior *bregmas* were closed and perfectly ossified.

Ingenious hypothesis, combined with medical acquirements have often endeavoured to account for the causes of monstrosity; but their speculations are lavish, and their labours not rewarded with the pleasing reflection that they have arrived at any just data to ground them upon; for this subject is enveloped in obscurity, only known to him *qui videt novit et facit omnia*, and it is not in the power of man, even argus-eyed, to penetrate the causes or remove the cloud which hovers over and obscures this wonderful phenomenon. But why does this subject excite the admiration of man, whilst the natural process of conception defies the microscope of the anatomist, and paralyzes the researches of the philosopher.

The opinions advanced concerning the cause have been multiplied; to enter into a detail of them would be too prolix; perhaps the modern opinion is more plausible and satisfactory than any other, viz. that there is something primordial or aboriginal in the fœtus, or coeval with the first rudiments of the embryo. The second, although a very ancient one, has justly sunk into oblivion, and only reminds us of the credulous suppositions of former ages, which are now considered as erroneous and disproved by common observation, viz. That the imagination of the mother transferred the imperfection of some object to the fœtus of which she was then pregnant. If facts however were advanced to substantiate any one position, the latter opinion might find no small share of support, from the following history which I obtained from the child's mother, and which I shall relate, believing it not uninteresting. She stated, that when advanced in her pregnancy about *two months*, with the subject of this communica-

tion, a man named *Dochterman*, of Millerstown, in the county of Lebanon, committed murder on his own son, by striking him with an axe on the frontal bone over the superciliary ridge of the right side; the consequence of which was a discharge of a portion of the cerebrum, and instant death. The report of this brutal act having been communicated to Mrs. Lewis by some of her neighbours, produced such an effect on her imagination as to cause immediate syncope, from which she was not aroused for some minutes. During the remaining months of her pregnancy her mind was daily impressed with the belief that something preternatural would present itself in her offspring. At birth her apprehensions were verified; and from the recollection of the various occurrences during that time, she explicitly assigns her son's deformity to be occasioned by the inhuman act of Dochterman; and what confirms her in the belief, and makes her more sanguine in her assertion, is, that this murderer struck his son in the mouth, and broke one of the incisor teeth, which has never appeared in her child. The subsequent day a man with a club-foot, named *Sueighart*, visited her, and appeared to have produced the same sensations, as she herself says, for the boy was born with a club-foot of the right side.

However far these facts might go to support the latter and most ancient opinion, still I think they are not reconcilable enough to the reflecting mind; for I believe with Dr. Denman, that "such opinions were permitted to pass current in order to protect pregnant women from all hazardous and disagreeable occupations, to screen them from severe labour, and procure for them a greater share of indulgence and tenderness than could be granted to them in the common occurrences of human life."

ART XI. *Quarterly Report of Diseases treated at the New-York City Dispensary, from the* 15*th of March to the* 15*th June*, 1826.

Asthma	2	Menorrhagia	6
Anasarca	4	Morbus Coxarius	1
Aphthæ	7	Mastitis	2
Amenorrhœa	29	Neuralgia	2
Abscessus	6	Otitis	27
Ascites	10	Ophthalmia Simp.	60
Amaurosis	4	——— Chron.	15
Bronchocele	2	——— Tarsi	21
Bronchitis Chron.	29	——— Purulenta	7
Bulimia	1	Orchitis	1
Catarrhus Simplex	71	Obstipatio	40
Cephalalgia	10	Otirrhœa Purulenta	13
Cachexia Syphiloidea	1	Phlebitis	1
——— Scrofulosa	1	Pharyngitis	1
Cephalea Nauseosa	33	Pleuralgia	79
Colica	4	Pneumonia	66
Cataract	6	Pleuritis	50
Contusio	107	Pertussis	19
Cholera	10	Parotitis	1
Cardialgia	6	Phthisis Pulm.	34
Contorsio	1	Phrenitis	3
Chlorosis	6	Paralysis	13
Dyspepsia	34	Porrigo Scutulata	4
Delirium a Potu	18	——— Favosa	22
Dentitio	9	——— Decalvans	6
Debilitas	20	——— Lanalis	1
Diarrhœa	19	Plethora	53
Dysenteria	18	Psoriasis	8
Dysuria	2	Phlegmon	7
Erythema	1	Ptyriasis	3
Epilepsia	3	Prurigo	2
Erysipelas	15	Pemphigus	1
Epistaxis	1	Paronychia	6
Febris Simplex	77	Rheumatismus Acut.	29
——— Remittens	38	——— Chron.	53
——— Intermittens	70	——— Venerealis	4
——— Puerperalis	4	Retentio Urinæ	2
——— Typhus	9	Rubeola	9
Fractura	7	Rachitis	1
Fistula in Ano	2	Surditas	21
Gastritis	2	Syphilis	24
Gastrodynia	30	Scrofula	6
Gutta Rosea	1	Splenitis	1
Gelatus	2	Stremma	19
Hydarthrus Rheumatismus	2	Strictura Urethræ	2
Hæmoptysis	1	Scabies Inveterata	2
Hydrocephalus	4	——— Vesiculosa	42
Hepatitis Chron.	30	——— Pustulæ	12
——— Acut.	1	Strophulus Confertus	3
Hæmorrhois	11	——— Intertinctus	1
Herpes Circinatus	1	Scarlatina Anginosa	10
Hernia	1	——— Simplex.	11
Hydrothorax	3	Sideratio	2
Hepatirrhœa	1	Tumor	17
Hydrops	2	Tinea Ciliaris	4
Icterus	4	Tracheitis	12
Impetigo	3	Tonsilitis	14
Iritis	12	Ulcus Cornæ	8
Lumbago	14	——— Chron.	36
Leucorrhœa	6	Ustio	24
Lichen Simplex	1	Urethritis	16
——— Pilaris	2	Vermes	50
Laryngitis	3	Vulnus	41
Marasmus	4	Varicella	5

Total 1864

The epidemic catarrh, which was subsiding at the date of our last report, had entirely ceased previous to the 1st of April. Gastric and intestinal derangements consequent upon the influenza, were extremely numerous. Arising from the same cause, were some cases of chronic bronchitis; but the most prevalent diseases were pneumonia, pleuritis, and pleuralgia. The greater number of these being of a mild character, submitted readily to emetics, active purgatives, and epispastics.

There were, however, some of a more acute form; of such, advantage was taken to make trial of the practice of administering large doses of antimony. Among the cases of this kind was a female of a full habit, aged fifteen years. Her symptoms were strongly marked as a case of pneumonia; severe pain in the left side, aggravated even by the act of speaking; respiration quick, frequent, and short; incapability of making a full inspiration; compression upon the left epigastric region increasing the pain; pulse 120, small and sharp. After full bleeding, and the administration of an active purgative, a blister was applied to the side, and she was put upon the use of the antimonial solution,

℞ Ant. Tart. gr. iij.
Aq. Pluv. ʒviij.

A table-spoonful was directed to be taken every hour. This produced emesis at every administration, so that her mother was induced to stop its use after the fifth dose. No alteration of her symptoms being perceived on the following day, she was again bled *ad deliquium*. The use of the antimony was continued. This was taken until she was again visited, (the following day,) without producing vomiting. There was at this time a slight amendment in her symptoms; respiration being a little more free, and attended with less pain; expectoration scanty, sputa white and tenacious, intermixed with bubbles of air; pulse 100. The proportion of antimony in the solution was increased,

℞ Ant. Tart. gr. x.
Aq. Pluv. ʒviij.

No amendment had taken place at the end of the three subsequent days, although the antimony had been increased within this time to *one drachm*, which quantity was taken in solution in the course of twelve hours. The epispastic had been re-applied, and the blistered surface kept continually sore. Finding, however, that the pulse of the patient became smaller, but not lessened in rapidity, that the tongue was parched, crusted, and cracked, that there was considerable restlessness, and no increase of expectoration, in fine, that she was growing worse; recourse was had to the usual practice. The treatment immediately pursued, was the administration of calomel combined with Dover's powder, purgatives, nitre, &c., from which great relief was obtained in the course of forty-eight hours. She finally recovered.

Other cases might be noticed, but it will suffice to observe that the result in no case was satisfactory, or even such as to prevent the final resort to calomel and opium.

The practice of Armstrong was more decidedly favourable in its results. It may be considered as one of the greatest improvements which have been lately introduced into the *ars medendi*. In congestive pneumonia, when the whole appearance of the patient indicates the *engorgement* of the pulmonary vessels; when the pain attendant upon this state is violent and without intermission, and the pulse sharp, incompressible, and laboured, the practice of Armstrong appears to be particularly called for. It is in this type of the disease that opium given immediately after a full bleeding is capable of restraining the *hæmorrhagic reaction*. If, however, the force of the disease be sufficiently powerful to overcome the effect of the opium, recourse to the lancet, followed by this remedy, must be had again and again, or as long as the accession of the pain renders it necessary. As soon as the *engorgement* of the vessels is relieved, and reaction prevented, the disease will give way more readily to the subsequent treatment, than if a less decided practice had been pursued in the beginning. Very frequently one decided bleeding, and the immediate administration of from 120 to 150 drops of laudanum, will at once check the progress of an acute pul-

monary inflammation. This is asserted from personal experience in cases where there could be no deception.

The instances of phthisis which fall under notice at this institution are numerous. Where tubercles exist, it is needless to mention any particular treatment, for such cases are generally considered as hopeless. But there are cases strongly simulating this fatal disease, which nevertheless submit to curative means. Upon a careful examination, the disease will be found to have its seat in the air-passages. The symptoms are those common in a great degree to phthisis pulmonalis, viz. emaciation, cough, purulent expectoration, febrile exacerbations in the evening, and night sweats. But the diagnosis must be drawn from some symptoms not consistent with the presence of tubercles in the lungs. The patient finds no difficulty in lying in any particular situation; he has not for any time previous been liable to occasional attacks of cough, dyspnœa, nor has he been peculiarly affected by atmospherical changes. There are none of these precursory symptoms so common to phthisis, but the disease is immediately consequent upon the inflammatory state existing in catarrh. The importance of distinguishing between these two diseases is great, for whilst one holds at defiance every curative means which may be employed, patients labouring under the other will have their health re-established. It is but lately that we had a case of this form of bronchitis, in which we were gratified to perceive a complete restoration to health. The means employed were the external application of antimony, both upon the chest and arms, careful attention to the digestive organs, with the occasional administration of aloes, and such cathartics as act upon the lower intestines. For the febrile exacerbations, large doses of the nitrate of potash, combined with pulverized gum arabic or tragacanth taken three or four times a day were extremely beneficial. To this the addition of minute portions of antimony was found useful. The diet was light and nutrient. Flax-seed tea, or an infusion of the bark of the slippery elm acidulated with lemon-juice, afforded a pleasant and excellent drink. After the cough and fever had ceased, nitric acid completed the cure.

The greatest relief was to be attributed to the pustular eruption produced by the antimony. Its application appears more decidedly beneficial than the use of blisters. The ointment is to be depended upon with less confidence than an adhesive plaster sprinkled with from a scruple to a drachm of the powder. The eruption is sooner produced, and in a greater degree than when the *pommade* is used.

Among the cases of pertussis, a few were of an extremely inflammatory character, showing strong symptoms of pneumonia. These were treated by antiphlogistics, and recovered. In the milder cases, after a slight emetic and cathartic in the first instance, the only remedy used was a solution of the subcarbonate of potash, with the tincture of assafœtida.*

The cases of neuralgia were strongly marked. Thomas Todd, aged forty years, of a full plethoric habit, and a stonecutter by trade; for some time previous to his being attacked, he had been troubled with head-ache and vertigo. Whilst walking in the street in September last, he suddenly felt a dizziness, and reeled against a house as if he had been intoxicated; upon recovering himself after a few minutes, his left cheek he discovered was deprived of motion. He immediately had himself bled, and took some cathartic medicine. In December he applied to the dispensary. At this time the left side of the face was much distorted by a paralysis of the muscles of that side; sensation however was as acute as on the opposite side, with a general contraction of the facial muscles towards the neck; he was also unable to close the eye, the conjunctiva of which was much inflamed. Connected with this, the patient was suffering from the most excruciating pains, shooting from beneath the left mastoid process through the cheek; following thus the course of the *portio dura* and its facial branches. This pain was peculiarly acute, and at intervals was similar to what he thought he should experience

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* ℞ Potass. Sub Carb. ℥ij.
Tr. Assafœt. ℥ij.
Ol. Menth. Pip. gtiij.
Aq. Pluv. ℥viij. M.

if heated wires were drawn through his flesh; it was also intermittent; the evening exacerbations being more constant and violent. His tongue was pale and slimy; pulse full but compressible. Skin rather dry; appetite good; but the bowels irregular, generally costive. He was bled and directed to be cupped upon each temple. An emetic and purgative were ordered, and a blister was also directed to be applied to the back of the neck. For the space of a week an infusion of senna was taken every morning, and for the evening exacerbation, which entirely deprived him of rest, opium at first was given, but as it afforded no alleviation of pain, its use was suspended. Trial was then made of quinine, but this was as useless. Two weeks after his entrance, as no substantial relief had been obtained, a more particular inquiry in respect to his former habits was instituted. From his family it was ascertained that, (although he had stoutly denied it himself,) he had been accustomed to drink large quantities of spirituous liquors, which very seldom however produced absolute drunkenness. He had had also, a year previous, an attack of intermittent fever, since which time he had been troubled with costiveness.

These facts led to a more certain knowledge of the causes of the disease, attention being particularly directed to the digestive organs, especially the hepatic system. With the intention of exciting a more healthy action in the chylopoietic viscera, an emetic was directed to be taken every afternoon as near as possible to the time of the regular exacerbation, and a blue pill with a full dose of Dover's powders at bed-time, with an infusion of senna in the morning. He also took a decoction of sarsaparilla frequently through the day, and was confined to light diet. From this treatment at the end of another week he was decidedly better; during part of the night he slept well, of which enjoyment he had been so long deprived. He was capable of exercising more power over the paralyzed muscles, and could nearly close the tarsi. The head-ache occasionally troubled him, and the neuralgic affection still tormented him, but in no degree

as severe as formally. The daily use of the emetic was suspended, but he was directed to take one whenever the pain should threaten to return with its former intensity. He also took a blue pill twice or three times a week, by which his bowels were kept in a soluble state. At the end of two weeks from this time he was discharged, having a slight deformity from the paralysis, and an occasional uneasiness of the stomach; he was able to close his eye, and chew equally well with either side of the mouth. He was however directed to continue the use of the sarsaparilla, to which were added colombo and gentian.

The second case was a married female, aged about thirty years. She was not affected with paralysis, neither had she as much pain as Todd. It was acute, but the paroxysms were not as frequent; there was also a considerable exacerbation every evening; her tongue was extremely foul and slimy; pulse irregular, and bowels habitually costive. The stomach and liver were greatly deranged. She had gastrodynia, and an enlarged state of the liver. The indications being plain, she was put upon the plan of treatment pursued in the former case, with a slight difference which circumstances seemed to require. An emetic was taken twice or thrice a week, and small doses of calomel, followed every other day by a cathartic. She became salivated on the eighth day. This, though unintentional, was not attended by an aggravation of her symptoms.* In fact she began to recover rapidly after this, and in three weeks from the time of her application she was discharged. The pains had entirely ceased, and she only complained of a disagreeable sensation of the stomach, and occasional vertigo. She was directed to take quinine and tincture of cinchona, and also an emetic if the pain should in any degree return.

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* The saturnine solution is by far the most effective gargle that we have employed in cases of salivation; the only disadvantage attending its use being the blackening of the teeth. The bowels should be well attended to during its use.

A month after this time she was accidentally seen. She had had no return of the disease, and her general health was better than it had been for several years.

Perhaps it may not be unimportant to mention, that previous to coming to the city for advice, she had been prescribed for by a physician in the country, who had in the course of a long attendance never directed a single emetic, but had kept her upon the use of bitter tonics, and the occasional use of a cathartic. From the woman's description of some powders which had been given her, we are inclined to the belief that she had taken no small quantity of the carbonate of iron.

In the history of these cases, the strong sympathy existing between the stomach and sensorium is very forcibly shown. In the treatment of this disease, it is a little singular that more attention should not have been shown to the general derangement of the digestive organs. In Great Britain the carbonate of iron is the fashionable remedy at present, but it is difficult to reason oneself into a belief that in similar cases to those here related, this medicine would at all have afforded relief. We cannot believe that if these patients had been dieted upon *iron rust.* their cure would have ever been affected. The high applauses which have been given to the carbonate of iron, seem to savor a little of a disposition to ascribe to it a specific action in neuralgia. It is prescribing for a *name*, and overlooking the causes of the disease. The principles of medicine it would seem were likely to be lost sight of, and a book on nosology, and a dispensatory, all the works which were to constitute a physician's library. There are no doubt cases which have been benefited by iron; but we believe a majority may be treated more successfully by attention to that great seat of disease, *the digestive organs.*

Neuralgia, we conceive, arises from some peculiar morbid action of the brain. This state may be induced by a continued functional disorder, excited by a long series of gastric derangement. That such causes produce great cerebral congestion, is witnessed daily, and that from a continuance of such a state of the vessels, the nervous system becomes

peculiarly affected, is also frequently noticed. Is it at all improbable that a diseased action thus produced, may give rise to a compression upon the origin of any particular nerve? or that this compression may excite an inflammatory action in its neurilema? We think not. In the case of Todd, there can be no doubt that the paralysis was produced by an engorgement of the cerebral vessels causing compression, and a loss of motion.* The same cause we apprehend gave rise to the attendant neuralgia. From the whole course of the disease, we are more firmly convinced of the correctness of this opinion. Coeval with the alleviation of the pain, the motary influence of the facial nerves was increased. The remedies were followed by two important effects; an increase of the diminished motary power, and a diminution of the excited sensibility. From this we infer that either of these diseases may be produced, according to the degree in which the exciting causes may be present, or to the greater tendency to excitability, which may exist at the time in the nerves of motion, or in those of sensation. As these causes act, or as the two systems of nerves may be predisposed to be acted on, so there will be produced either an increased sensibility in one, or a paralysis of the other.

Finally, that neuralgia does in almost every instance arise from a disorder of the digestive organs, is inferred from the history of cases recorded, and from the few which have personally fallen under our notice. In these the patients exhibited both by their tongue, irregular appetite, and state of the bowels—a general derangement of the digestive functions. This disordered condition was of long standing, generally a number of years, and may have been produced by various causes. The patient had also in most instances suffered from chronic hepatic affection, with all its attendant miseries; gastrodynia,

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* We are aware that from Mr. Charles Bell's experiments, it is generally believed that the muscles may be paralyzed independently of any affection of the brain; but the whole history of Todd's case will not permit us to doubt that cerebral compression was productive of both the paralysis and the neuralgia.

constipation, vertigo, languor, and a continual state of *ennui*. After the long continuance of these, either in a more severe or milder form, attendant upon great nervous irritability; he has had occasionally sharp pains of a momentary duration, shooting suddenly along the course of the nerve, when, unexpectedly he is attacked by neuralgia, with all its accompanying tortures.

In the treatment, the object of the frequent administration of emetics was not only to rid the stomach of its morbid secretions, and excite in it a more healthy action, but particularly to destroy as much as possible the habit of the regular paroxysms, which in both cases were most violent in the afternoon. With this intention they were taken as soon as any increase began to be felt. After the action of vomiting, the consequent nausea lengthened materially the time of the renewed accession. The remedy to be particularly relied on, however, we think is calomel, or the blue pill, given in alterative doses, and followed frequently by drastic cathartics. In connexion with these, there are other remedies which will be found necessary. From the long continuance of the functional disorder of the stomach, *tonics* will be required; *sarsaparilla* with *colombo*, in the form of decoction, serve every purpose extremely well. Strict attention to diet will be found highly necessary. After the patient is relieved of the pain, and needs no longer the attendance of a physician, a very good preparation for him to take occasionally, is one, the combination of which we found in Johnson's Review.*

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* ℞ Magnes. Calcin. ʒij.
Aq. Ammon. ʒj.
Ol. Cinnam. guv.
Aq. Pluvialis ℥viij. M.

REVIEW.

ART. I. *Observations on the autumnal Fevers of Savannah.* By W. C. DANIELL, M. D. Savannah and New-York, 1826. 8vo. pp. 152.

WE can well conceive the solicitude and embarrassment which an author must unavoidably experience, when he presents himself before the public as the champion of an unpopular cause, or the defender of principles against which the highest authorities have long entered their solemn and decided protest. Innovations of all kinds are regarded with jealousy, and he who would gain favour and support in a contest against established maxims and precepts sanctioned by time, must come armed with weapons of no ordinary power, and employ arguments sustained by the clearest lights of truth, before he can hope to effect his purpose. In medicine, more especially, a science so unbounded, and involving the dearest interests of humanity, the most unequivocal evidence of experience and competency will be required in him who attempts an overthrow of received doctrines, and accumulated observation. We are not displeased, therefore, with the acknowledgment of anxiety by the author now before us, when he attempts, with no small share of boldness, to revive the long-exploded doctrines of debility and stimulation in bilious and yellow fevers. Aware of the hazardous attempt, he prefaces his remarks with an account of his experience, his success, and the success of those who have entered into his views. Unfortunately for him, however, there is a document in existence

which goes far, in our opinion, to set aside his views and conclusions concerning the diseases of Savannah. In an account of an epidemic prevailing near and at Savannah, written by Dr. William R. Waring of that place, and published in the North American Medical and Surgical Journal, we find that fever in Savannah observes the same laws as it does every where else—assuming different forms according to variations in the causes predisposing and exciting, and in the constitution of the individual attacked, and that the treatment was varied according to the form.* Of debility Dr. Waring speaks thus: "Muscular debility, tranquil or diminished action of the heart, moderate temperature of the skin, are the common result of cephalic irritation of intestinal and gastric irritation, and even of pneumonic irritation. Accordingly it has been found, that blood-letting, moderate evacuations from the bowels, &c. have proved the most successful remedies." This is language very different from that which we shall presently see used by Dr. Daniell, who not only denounces bleeding and mercury, but even purgatives, diaphoretics, and, in short, all evacuant remedies.

Having made these preliminary remarks by way of a caveat to the reader, we now propose to furnish him with a condensed view of the author's views and facts, that he may judge for himself of the pertinency of our general exceptions against the inculcated doctrines.

The first part of the volume contains some observations on the topography of Savannah, from which we learn, that this city stands upon a plain, on the south side of the river of the same name, about twelve miles distant from the ocean; that this plain is elevated about forty feet above low-water mark, and is composed of sand mixed with clay. Iron also enters into the composition of the soil. Opposite to the city lies Hutchinson's Island, formed of alluvial soil, and subject to inundations by ordinary spring tides. On the east and west, the city is bounded by lands similarly formed and situated as Hutchinson's Island, all of which are, therefore, well adapted

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* See the number for January 1826.

to the cultivation of rice. The city of Savannah is open and spacious; the streets are numerous and wide, intersecting each other at right angles, and having large squares at regular distances. Dr. D. infers it as obvious, from this statement, that there is not in the character of the soil, nor in the situation of the city, any thing to preclude it from the enjoyment of health, and that whatever causes of disease exist are under control. In evidence of this position, a history of the dry culture system is given with some detail, for which we have not room. It appears satisfactorily, that while the low lands remained in a state of nature, they did not occasion disease; and that the dry culture system has again redeemed them from the obnoxious charge of being fomenters of disease, to which they were subjected while under wet culture. The following remarks on the etiology of yellow fever, we give in the author's own words:

"It has been already stated, that the great mortality from the yellow fever of 1820, aided in bringing the dry culture system into disrepute. The production of this epidemic having been attributed to various causes, it may not be amiss to point out its real sources. In the first place, it will be proper to remark, that during a few years previous to 1820, a very great number of labouring foreigners, and especially Irish, came to the United States. The large cities to the north were soon thronged with them. The commercial embarrassments which occurred soon after, diverted many to the south; and a large number located themselves in this city.

"White porters and draymen were unknown in Savannah previously to the winter of 1818-19. Very many arrived in August and September of the latter year, almost all of whom speedily became victims to the climate. In the winter of 1819-20, our city was literally thronged with them. Every tenantable house was crowded. The great fire of January, 1820, dispossessed very many of them of their frail homes. These were necessarily driven in upon their countrymen; and frequently two and three families were found in small houses of one story, with but two small rooms ten or twelve feet square; in one of which the occupants cooked, washed, and ate; and slept in the other. I have, elsewhere, adverted to the inattention of the police to cleanliness. The filth was greatly increased by these crowded families. It was in the eastern and western extremities, where these people mostly lived, that the fever made its appearance. In the central southern part of the city, which had been recently built up, and where there was none of this crowded population, no case of fever appeared during the whole season.

"There is no doubt, but that the decayed condition in which many of the small buildings were, also contributed, though very subordinately, to the causes of disease. My own observation of the extreme filthiness of these over-peopled portions of the city, is fully confirmed by the report of a committee of the Georgia Medical Society, who examined them. Three of the four physicians who composed that committee, died in the course of the season. The other, (the respected president of that society,) from domestic afflictions, left the city. The ruins, occasioned by the fire of that year, have been by many considered as causing the disease. These were in the northern central portion; in the neighbourhood of which, the cases of fever were by no means comparatively so numerous, as in the eastern and western sections. In the absence of our new population of foreigners, the causes of disease as they existed, would no doubt have produced great mortality; but it is certainly true, that that population afforded near three-fourths of the whole number of deaths.

While many adduced the fact of the mortality of this season, to prove the inefficiency of the dry culture system, a faint effort was made to induce a belief that it was the cause of the disease. Either opinion is, however, equally erroneous, as has been since proved by ample experience." pp. 22, —24.

Autumnal Fevers. Under this term our author embraces the intermittent, remittent, continued, and yellow fevers; considering them all as arising from similar causes or modifications of the same cause, subjected to the same rules of treatment, and therefore as being essentially the same disease. We need not inform our readers, that this view is directly contrary to that we have promulgated in this journal, and of which we gave a pretty ample exposé in our fifteenth number. Dr. Daniell thinks it *probable*, that all autumnal fevers are modifications of the simple tertian. Quartans rarely occur in Savannah; simple and double tertians are the prevailing forms. Continued fevers are not common, and becoming more and more rare.

Dr. Daniell here commences his attack in form upon the depleting and mercurial plans of treatment in bilious fevers, by imputing to their agency a change in the form of the fever from the intermittent to the remittent and continued type. Thus, he tells us that previously to the introduction of these modes of treatment, the fevers of Savannah were decidedly intermittent, but after their adoption, these assumed a remittent, or continued type. In confirmation of this view

of the subject, which will appear singular to many of our readers, Dr. D. adduces the fact, that the poor who reside in the most unhealthy locations, suffer chiefly from intermittent fevers. These, it is contended, receive *little* medical attention, unless when sought out by charitable persons; hence "the intermittent type of their fevers is attributable to their being left to the resources of nature." So much for his facts: upon which we shall only observe, that the author has lost sight, although he asserts the contrary, of the influence which the dry culture system has exercised over the character of the diseases in question, and also of the important consideration, that the east and west portions of the city in which the poor reside are in the immediate neighbourhood of low marshy ground, the true locale of intermittents.*

Now for his theory:

"There are but few matters of opinion upon which my convictions are more clear, than that the intermittent and remittent type of our fevers, may be influenced by active and drastic purgings. Such means increase very much the tendency of blood to the internal parts, counteract the efforts of the internal capillaries to relieve themselves, by throwing off the excess of blood cast upon them, and by overpowering, impair their vigour. I well know, that this is a point upon which physicians may fairly differ, as it cannot be subjected to absolute proof; for, upon the supervention of a fever, no one can say, with certainty, what will be its type." p. 44.

With the opinion advanced in the first sentence just quoted, we perfectly agree. Purging not only *may*, but *does* influence, and that to a great degree, the character and duration of periodical and all other fevers. And what is the influence they exert? They remove fœcal accumulations, which, by remaining in the intestines would prove active and dangerous irritants to the system. By the removal of these extraneous matters from the intestines, the descending bloodvessels are freed from oppression, and the blood is diverted from the head and larger viscera where it is too

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* See page 18.

apt to be detained, and to form serious congestions. Nor does the agency of purgatives rest here. By increasing the secretion of the bowels, they directly diminish the quantity of fluid stagnating in the abdominal circulation, and indirectly excite the secretions of the liver and its adjacent glands, by which a powerful support to the morbid associations incident to fever is effectually withdrawn. Not so, says Dr. Daniell. "Such means increase very much the tendency of blood to the internal parts, and counteract the efforts of the capillaries to relieve themselves!"—and he adds, "by overpowering, impair their vigour." It were superfluous to expose in detail the fallacy contained in this sentence. Dr. D.'s views of pathology and of the operations of medicine, are assuredly *singular*.

We are next presented with reflections on the manner in which the causes of fevers are introduced into the system; and the opinion of our author appears to be, that they act through the medium of the atmosphere on the external capillaries. These being impaired in their function, the internal capillaries receive an undue portion of blood, and are stimulated to reaction. Sometimes the effect is so complete and sudden, that the system is capable of no reaction. Hence patients die in the cold stage, or the disease is throughout of the congestive kind. Here our author insists upon it, that the only chance of success consists in producing a reaction; and no one will dispute the correctness of his rule. Why does he not go one step further, and admitting that reaction does take place, modify his views of treatment according to the degree and violence of this reaction, and the vitality or sensibility of the organ upon which, from previous predisposition, this reaction is almost certain of expending itself?

We have not time to follow the author in his speculations, which are common-place enough, upon the functions of the capillaries—the bloodvessels—the liver and spleen. At page 57, however, we find the following sentence. "In the former, (the liver) as well as the latter, (the spleen) I am disposed to claim the existence of an erectile tissue." This idea, Dr. D. says, has been suggested to him by their tendency to

enlargement. Would not any one gather from this language, that the author claimed this view as originally his own? And if he does so, then how will he answer it to himself or to the profession in the South, for whose literary reputation he appears to be exceedingly anxious, that in an investigation concerning the physiology of the skin and internal organs, he has omitted to consult the work of Bichat and Beclard, where this same idea of an erectile tissue was years ago advanced, and whence it has since been copied into the elementary treatises?

In his unsparing crusade against mercury and drastic purgatives, Dr. D. next discovers, that impaired digestive powers of the stomach, unhealthy appearance of the skin, and decayed teeth, are all chargeable to these deplorable foes to health, appetite, and beauty. Nay, he goes so far as to tell us, that he has met with but few persons with decayed teeth, who, upon inquiry, have not admitted their *habitual* use of calomel. How many females and exquisites will not rise up in arms against Abernethy and Armstrong, and all our medical brethren in this country, not excepting Dr. D.'s kind preceptor, and demand at their hands their racy and keen powers of digestion, their once rosy and fair complexions, and above all, their once vigorous and pearl-white masticators! But enough.

It is pleasing to us to exchange dogmatism and paradox for acknowledged truth, however familiar. We quote therefore at large the following paragraph on contagion:

"One reason alleged, especially in Europe, for a belief in the contagion of yellow fever is, the reputed fact, that the same person cannot take the disease a second time. Although the unfrequency of a second attack from the causes alleged above, gives some plausibility to the assertion, it is certainly erroneous. It is a very common impression among our inhabitants, that a person who has experienced a severe fever should seek the following season a northern climate for the perfect restoration of his health. Such as adopt this means, destroy the future protection derived from the attack of fever; and render themselves upon another summer's residence among us, almost as obnoxious to the cause of the disease, as upon the first exposure. Near three hundred negroes were brought into this place early in 1820, who had been captured on our coast, by government vessels. They

were recently from Africa. These persons remained in Savannah during the prevalence of yellow fever, and not one suffered from the disease. Their exemption is attributable to their habitual exposure in their native country to the causes of yellow fever; equally concentrated with those, which prevailed here; at that time, producing among us a mortality, perhaps unexampled in this country. Africans, however, like other people, are subject to the influence of climate, custom and habits; and the exemption from yellow fever, which they acquire by their habitual exposure at home, is gradually impaired by their translation to more healthy climates. Dr. Rush, supported by some West India physicians, then in Philadelphia, declared the negroes not liable to yellow fever. Observation, however, soon satisfied him of his error, which was readily acknowledged. The opinion of the West India physicians, confined to the field of their observations at home, was no doubt correct. It was the change of climate, with the subsequent change of habit, that subjected the negroes of Philadelphia to yellow fever. Negroes habituated to the atmosphere of rice plantations, are in a very great degree exempt from severe autumnal diseases; and the native African, more so than his offspring; and they are more liable to the diseases of winter. House servants are more liable to the former, and less so to the latter. This difference of predisposition, among members of the same family, is mainly attributable to the influence of their habits and customs. Many of our domestics became victims to the yellow fever of 1820. The rice field negro is less removed in his atmosphere, habits and customs, from those of his native country, than the house servant. The first delights in the heat of our hottest days, if we may judge from the manner in which he voluntarily exposes himself, both awake and asleep, to the direct influence of the sun; whilst the latter studiously avoids it. In the proportion that an individual acquires an exemption from yellow fever, his liability to winter disease increases. Nature has most happily endowed our systems with a capacity to adapt themselves to new situations. That state of the system which is best qualified to shield us from yellow fever, is least calculated to protect us from winter disease; and *vice versa*. The skin of the African defending him from disease, in the midst of his exposures at home, upon a translation to a cold region, renders him highly obnoxious to winter disease. The vigorous health of the New-Englandman, that sustains him in his hardy exposure at home, qualifies him for severe disease, when translated to the West-Indies. Each may in time, if he survives the first shock, become habituated to the evils of his new situation; but can never enjoy the impunity of the native." pp. 63 66.

Some desultory remarks follow on the symptoms of autumnal fevers, from which we are left to the inference, that Dr. D. has been peculiarly fortunate in never meeting with a case in which reaction was so fully developed as to thwart his

favourite plans of stimulation. This, it is well known, has often been the favoured lot of theorists and specific healers, and we are content that our author should enjoy all its advantages.

Is autumnal fever inflammatory?

In combating the affirmative of this question, our author seems to take it for granted, that all practitioners who do not confine themselves exclusively to the tonic plan, identify fever with inflammation. Now such perversion implies in the writer either wilful blindness, or the most unpardonable ignorance. All that we, in common with a large majority of the physicians of the present day, contend for is, that local inflammation often accompanies fever as a consequence, not an essential link in the chain. We do contend, that in the greatest number of febrile cases, there is at the commencement, and immediately after the first or forming stage, action in excess: and that this action requires reduction. Dr. D. is correct, therefore, when he says, "It has been urged that all fevers are at first inflammatory, but that they soon run to a state of debility, and that bleeding is to be limited to the first stage.*" How correct he is in what follows, will be evident at the first glance: "It need only be replied to this paradox, that *as the stage of debility is the only one attended with danger, (!)* it cannot be judicious to precipitate that condition by reducing the system," &c. Is it possible that any physician, in this enlightened age, can be so ignorant of the principles of pathology, as not to be aware that the danger in fevers, after the first invasion has been withstood, arises chiefly from the excess of action overpowering vitality in one or more of the most important viscera, and displaying itself in the form of inflammation or congestion? Have these prinples not taught him too, that subsequent debility is almost invariably proportionate to the previous excitement, and that the reduction of the latter is the only safeguard in our hands against a dangerous supervention of the former? Not

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* Page 79.

contending then for the exclusive and essential inflammatory character of fever, we do not think it necessary to go through the arguments of our author tending to prove that many cases of fever are not accompanied with local inflammation.

Upon *salivation* we are presented with a few remarks, all going to show the inutility of this process, and in fact of administering mercury at all in fever.

Method of treatment. Notwithstanding all we had read in the former part of this work, when we reached this chapter, such was the force of invincible habit, that a lancet, a dose of calomel and jalap, an emetic, or at least a spoonful of castor oil, was immediately present to our anticipations. But how mistaken we found ourselves—enveloped still in the midst of prejudice and old-fashioned rules !

1st. *Sinapisms.* We are startled at the two first sentences which occur. "These have heretofore been used for their rubefacient virtue. *I* have resorted to them, to inflame the skin." We would humbly ask the author, wherein the difference in indication lies between those who have excited redness, and with it heat, and tension, and pain, in a part, and *him* who *inflames* the skin ? We wait for an answer.

By sinapisms extensively applied, the circulation is, according to our author, diffused equally throughout the system, and local congestions are removed. "*These* (sinapisms) *are directed without regard to the temperature of the surface, or condition of the patient, provided fever be present.* The author avers that they induce evacuations by the bowels, which, if produced by a moderate purge, would be injurious.

2. *Cayenne pepper.* This is given in the form of tea, in as large doses as the stomach can bear.

3d. *Serpentaria Virginiana.* We are surprised that the author does not apprehend debility from the diaphoretic effects of this medicine : he is somewhat fearful of its producing excitement in the brain, or delirium. The Cayenne pepper, we suppose, will counteract this tendency.

4th. *Bark.*

5th. *The Arsenical Solution.*

We now commit Dr. Daniell to his professional brethren. If our criticism has been other than impartial and just, their suffrages will assuredly acquit him, and secure him a far more grateful reward for his labours than our praise could have ever bestowed.

ART. II. *The Institutes and Practice of Surgery: being the Outlines of a Course of Lectures.* By WILLIAM GIBSON, M. D. Professor of Surgery in the University of Pennsylvania, &c. In two volumes. Philadelphia, 1825.

WE resume the analytical notice of this work, which we commenced in our last number, and which we shall now bring to a close.

Chapter VI. In this chapter our author takes up the consideration of *Specific Diseases*, as Scrofula, Cancer, as affecting various parts of the body, Fungus Hæmatodes, Gonorrhœa, and Syphilis.

Scrofula. On this subject we do not find that any thing new is offered. With regard to the cause of the disease, Dr. Gibson is inclined to adopt the opinion of Carmichael and Lloyd, who refer it to a deranged condition of the digestive organs.

In the *treatment* of this disease, the occasional use of mild purgatives is recommended, such as magnesia, rhubarb, castor oil, and the blue pill. The diet of the patient is the principal thing, however, to be attended to. This should be light and nourishing, consisting chiefly of plain animal food, and such other articles as the stomach can easily digest. Along with this are advised bark, either alone or combined with iron, a change of climate, or removal from a cold and damp to a dry and warm situation, flannel worn next to the skin, keeping the body and extremities warmly clothed, together with moderate exercise. We are surprised to find, among the list of remedies, no mention made of *Swaim's Panacea*, a celebrated nostrum, to which Professor Gibson, and some other of his colleagues in the University of Pennsylvania, have seen fit to lend the

support of their names. We certainly expected to have seen a detailed account of the extraordinary virtues ascribed to this wonderful medicine. Dr. Gibson probably supposed that, as his recommendation of it was regularly published in most of the newspapers of our country, it was unnecessary to say any thing further on the subject.

Cancer. Under this head are considered the various forms of this disease, as affecting the eye, lip, tongue, breast, uterus, rectum, penis, and testicle; but we find little that is not familiarly known.

The following statement, in relation to extirpation of the womb in cases of cancer of that organ, is interesting, as it shows the safety with which this formidable operation may be performed.

"Professor Osiander of Gottingen, was the first to conceive and execute so bold a project; and his example has been followed by Dupuytren and other European surgeons. The first operation of the kind was performed by Osiander in 1801, on a widow, whose vagina was filled by a very vascular, fetid fungus from the orifice of the womb, as large as a child's head. By means of Smellie's forceps, the fungus was brought down low in the vagina, but being accidentally broken off, a tremendous hemorrhage ensued. Undismayed, however, by this event, the operator determined to proceed, and immediately pushed a number of crooked needles, armed with strong ligatures, through the bottom of the vagina and body of the uterus, until they emerged at the inner orifice. These ligatures served to draw down the uterus, and retain it in the vagina near the external orifice. The surgeon then introduced a strong bistoury above the scirrhous portion, and divided the womb completely in a horizontal direction. The hemorrhage for an instant was violent, but speedily suppressed by a sponge saturated with styptics, and the patient recovered in three or four weeks. Osiander afterwards performed eight similar operations upon different patients, all of whom recovered without the slightest difficulty. Dupuytren also has performed the operation eight times; but instead of employing the ligatures and bistoury recommended by Osiander, he drew down the uterus with forceps, and divided it above the scirrhous part by curved knives and scissors. One of the patients, upon whom Dupuytren operated, had a return of the disease, and submitted to a second operation with no better success, until Recamier, a surgeon of the Hotel Dieu, contrived a speculum through which caustic was repeatedly introduced, and by it a complete cure was at last effected." p. 288–290.

The *cancer scroti*, or chimney-sweeper's cancer, has never, according to our author, been known in America. He is disposed to attribute this to the general use of wood instead of coal, or to the circumstance of negroes alone being employed in the sweeping of chimnies.

Fungus Hæmatodes. Of this very terrible disorder, we are presented with the following condensed and satisfactory account:

"This disease may occur in almost any part of the body; but the extremities are particularly liable to it. Though not very common in America, it occurs often enough to deserve the attention of the surgeon. When it occupies any of the external parts, it is characterized by the following appearances:—In the incipient stage a small tumour is perceived, almost devoid of sensation, smooth on the surface, moveable under the integuments and elastic to the touch. This may remain stationary for years, without giving the patient the slightest uneasiness, until a blow or strain, or some accidental injury causes it to inflame, and then it increases with wonderful rapidity, while the skin loses its natural colour, and becomes mottled or red in some parts and purple in others. In a few weeks the tumour attains a considerable bulk, and in proportion to its growth is rendered protuberant or lobulated; at the same time the veins on its surface are greatly enlarged and very conspicuous, and at no very distant period ulceration takes place in one or more spots, from which a fungus sprouts with the utmost luxuriancy. This fungus is of a dark red colour, extremely vascular, and commonly contracted about the neck, while the top is expanded and irregular. The disease having advanced thus far, soon contaminates the contiguous lymphatic glands, which are converted into a substance exactly resembling that of the original tumour. In the mean time the patient's health gradually declines, the countenance assumes a yellow cadaverous hue, the whole constitution is undermined by hectic, and death speedily follows.

"The morbid mass, when examined by *dissection*, exhibits appearances altogether distinct from those met with in any other disease. A very thin and undefined capsule invests the whole tumour, and, within this, lobes separated from each other by membranous partitions of soft pulpy matter, resembling *brain* in consistence and colour, compose the greater portion of the distempered fabric. In the midst of this medullary-like matter are often found cells filled with clotted blood; at other times small cysts are met with, containing a thin, sanious, and fetid serum. So extensively involved are all the textures in the neighbourhood of the tumour, that the muscles are often annihilated, or their structure so subverted as scarcely to be recognised, and the arteries, veins, nerves, and cellular membrane all blended together in one confused mass. When the lymphatic glands

and those in the course of the circulation are examined, they are found equally diseased, often throughout the body. The same may frequently be said of the liver, lungs, kidneys, and brains, all of which exhibit proofs of universal contamination.

"Fungus hæmatodes has been confounded with aneurisms, cancerous tumours, and other diseases; and I have known such mistakes attended with very serious consequences. From cancer, to which it bears a greater resemblance than any other affection, it differs in the following respects. The tumour of fungus hæmatodes is large, soft, and elastic, and to the touch imparts so deceptive a sensation of fluctuation, that a lancet has often been pushed into it—under an idea that it contained purulent matter. The scirrhous or cancerous tumour, on the contrary, is hard, solid, and incompressible, and in the advanced stages frequently shrivelled or contracted. Fungus hæmatodes, when dissected, is found to consist chiefly of a soft, pulpy, tenacious medullary-like matter. Cancer, when examined in the same way, exhibits a hard, fibrous substance, resembling cartilage, which occupies the centre of the tumour as a nucleus, and from this centre white narrow bands proceed irregularly towards the circumference. Fungus hæmatodes is almost invariably met with amongst children and young persons—cancer may be said to be almost peculiar to the old. Fungus hæmatodes occurs in organs which cancer never attacks—such as the brain, liver, kidneys, and spleen. Other distinctions might be pointed out, but these are sufficient to designate the complaint.

"The *eye*, according to late European writers on that organ, is particularly subject to fungus hæmatodes. In this country I have never seen more than three or four cases of the disease; these differed materially from cancer of the eye. The retina and optic nerve are the textures in which fungus hæmatodes usually commences, and the first symptom is an obscurity of vision, occasioned by a small shining tumour, which occupies the bottom of the posterior chamber, and may be distinctly seen by looking into the pupil. This tumour slowly increases, advances into the vitreous humour, and finally reaches the iris, behind which it appears so much like cataract as to be with difficulty distinguished from that disease. Soon after the whole eyeball loses its spherical form, becomes irregular or protuberant, the cornea ulcerates, and a large, soft, dark red or purple fungus is sent forth. When the diseased mass is removed by an operation and examined, it is found to consist of medullary-like matter throughout, and so exactly resembling in other respects the structure of fungus hæmatodes, as to render further description unnecessary. The circumstance of fungus hæmatodes commencing generally at the bottom of the eye, its attacking almost invariably children and young subjects, and the peculiar structure of the morbid mass, are sufficient proofs that the disease is distinct from cancer, which usually occurs in old people, originates in the anterior parts of the eye, and when dissected presents appearances very different from those just pointed out.

"The *testicle*, when affected by fungus hæmatodes, sometimes resembles hydrocele so closely, that the most intelligent and experienced surgeon is unable to decide between the two diseases. This deception, however, cannot endure a very long time; for after the fungus hæmatodes tumour attains a moderate bulk, the constitution shows evident marks of contamination, and the lymphatic glands of the thigh and groin are sensibly enlarged. It is hardly possible to confound the scirrhous testicle with fungus hæmatodes of the same organ. The one is very firm in its texture, and extremely heavy; the other soft, fluctuating, pulpy, and generally free from pain. When *dissected*, the structure of fungus hæmatodes of the testicle is better marked, perhaps, and affords more striking evidence of the genuine disease than is met with in any other part of the body.

Besides the testicle, fungus hæmatodes occurs primarily in the thyroid gland, lungs, liver, spleen, kidney, female breast, uterus, ovarium, and some other parts, and in every instance exhibits characters too distinct and regular to leave any doubt of its being unallied to cancer, or any other affection with which we are acquainted—notwithstanding the assertions of some of the French surgeons to the contrary." pp. 307—313.

Gonorrhœa. Among the *local* remedies for this disease, a solution of the *nitrate of silver* is recommended as far superior to any of the injections ordinarily used. Dr. G. states, that he has used it for the last thirteen years, and with the greatest success. He commences with three grains of the caustic to an ounce of water, and gradually increases the strength of the solution until it is sensibly felt by the patient. Used in this way, it effects a speedy cure. In some instances, considerable advantage has been derived from the caustic, when mixed with oil, and introduced into the urethra on a small bougie.

Syphilis. The following account of our author's experience in relation to the introduction of mercury into the system by *fumigation* is worthy of notice.

"This practice was known at a very early period, and indeed employed extensively in every form of syphilis, in preference to the internal use of mercury. It appears at one time to have been abandoned, but afterwards revived by Lalouette, a celebrated physician at Paris, who states, that during the space of thirty-five years, he had cured by means of it upwards of four hundred patients, after all the ordinary remedies had failed. Upon the recommendation of Mr. Abernethy, I commenced many years ago this plan of treatment, and found it greatly to exceed my expectations,—producing in a very short time a decided impression, after the system had

resisted for weeks or months the operations of calomel and the blue pill. It is well known, indeed, that there are many patients upon whom these and most other preparations of mercury fail to induce a salivant effect—which is afterwards brought about very speedily by fumigation. This circumstance has been adduced as an objection to the general employment of the remedy, inasmuch as it is difficult to introduce into the system a sufficient quantity to insure permanent benefit—owing to the rapidity with which the mercury operates when thus administered.

"There are two or three modes of conducting the fumigating process; one of which, and perhaps the most simple, is to seat the patient, who is previously stript to the skin, in a common arm chair, and surround the whole body, with the exception of the head and neck, with thick blankets. Beneath the chair is then placed a common iron pot or chafing-dish, full of live coals, and over this a thin sheet of iron, the surface of which, when heated, must be strewed with some mercurial preparation capable of volatilization. The fumes ascending, penetrate the skin in every direction, and enter perhaps the lungs. A copious perspiration is usually the result of the operation; and to prevent the patient from taking cold, he should be carefully wrapt in the blankets and conveyed to bed.

"Another method, more complicated and perhaps not more effectual, is to enclose the patient in a box, resembling a sedan chair, having an opening at the top to let out the head, and another at the bottom holding a small furnace. The preparations usually employed in either process are factitious cinnabar, the black sulphuret of mercury, or else a grey powder, formed by mixing together four ounces of calomel, two drams of aqua ammoniæ and six ounces of distilled water. This powder is separated by filter, and dried, and is preferred by Mr. Abernethy to any other in use.

"The great advantage possessed by fumigation over the common modes of introducing mercury is, as before mentioned, its speedy operation, which renders it particularly valuable in all those ulcerations of the throat and nose, which are rapidly spreading, and threaten destruction to the delicate parts amongst which they are seated. From extensive experience, I can recommend the plan, in all such cases, with the utmost confidence. Nor have I found it less effectual in dispelling venereal discolorations of the skin and blotches." p. 363—365.

Chapter VII. treats of Fractures.

Chapter I., of volume second, is devoted to *Luxations*, and the mode of managing them.

Chapter II. In this chapter we have an account of the various *diseases of the bones and joints*, as caries, necrosis, exostosis, spina ventosa, osteo-sarcoma, mollites ossium, fragilitas ossium, rachitis, coxalgia, fungus articuli or white

swelling, hydarthrus, ecphyma cartilagineum, or moveable cartilage, anchylosis, deformity of joints.

Caries. In the treatment of this disease, Dr. G. reprobates the practice of removing the carious bones by the actual cautery, or by instruments, as having been productive in his own experience of very injurious effects. Partial benefit has been derived from the ancient practice of touching the diseased bone with some of the *mineral acids.* By Dr. Physick, the gastric juice of animals, particularly that of the hog, has sometimes been found useful as a local application. In cases of constitutional caries, blisters, issues, setons, and steady purging are recommended.

Spina ventosa. Our author thinks Sir Astley Cooper, and some other writers have improperly described this disease as a species of exostosis.

"It differs from it in many respects. The exostosis is small, firm, solid, and incompressible. Spina ventosa, on the contrary, usually attains a much larger bulk than exostosis, involves the whole circumference of a bone, and, when dissected, is found to consist of a mere osseous shell perforated with numerous holes, and containing sometimes a thin sanies mixed with loose portions of lymph, or of a substance resembling cheese. It is to this disease Mr. John Bell* alludes when he says, "The solid bone, whether radius or thigh bone, is annihilated, and a mere shell of osseous matter substituted in its place, and that in a manner so peculiar, that it must seem to the unintelligent observer, as if the small and solid bone had been expanded into an extensive and flat plate of osseous substance, whereas the process is in truth very simple and very intelligible. The bone dies by piecemeal of ulceration, or what, in technical language, is termed caries, and is conveyed away by absorption; but the bone being dead, the surrounding membranes—viz. the periosteum and tendinous expansions, which once formed a part of its system of circulation, continue still alive, and ready to secrete new bone; and thus it happens, that while carious abscess preserves a large cavity full of foul matter, the surrounding membranes continue secreting bone, which, like a shell, thin and expanded, covers this cavity, and forms the walls of the tumour, of which some part is composed of thin expanded bone, resembling a cranium, some of cartilage, some of thickened membrane; and this shell is formed in proportion as the original fabric of the bone is destroyed."

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* Principles of Surgery, vol. iii. p. 59.

"The cylindrical bones are commonly the seat of spina ventosa; though I have met with the disease, in two or three instances, among the flat bones. The finest specimen I ever saw, was sent to me a few years ago by Dr. Stevens of New-York. It occupied the radius of the left arm, and the bone, nearly from the elbow to the wrist, was expanded into one or more irregular shells, the size of a cocoa-nut, and contained a thin steatomatous matter.

"*Treatment.* When the smaller bones, such as the phalanges of the fingers and toes, are affected with spina ventosa, a cure may sometimes be produced by moderate long-continued pressure directly over the tumour; at other times, I have succeeded by making an opening into the cavity, and by stimulating injections, or by cutting instruments, exciting such a degree of irritation, as to cause it to fill up with granulations. In this way I once cured an obstinate spina ventosa of the lower jaw, about the size of an egg. Should any of the large cylindrical bones be involved, and the tumour attain a large size, nothing less than amputation will be likely to answer. This was successfully resorted to in the case of Dr. Stevens's patient." p. 62—64.

Coxalgia, or hip disease. The most important suggestion here in relation to the treatment of this dreadful disease, is that of long continued purging; a practice introduced originally by Dr. Physick. Our own experience has satisfactorily convinced us of its high utility.

In Chapters III. and IV. is taken up the subject of *diseases of the arteries and veins*, in which we perceive nothing new. In relation to the operation of tying the *arteria innominata*, the following sentiments are expressed.

"The project of tying the *arteria innominata*, in certain cases of axillary and subclavian aneurism, has been suggested by different surgeons; and my friend Dr. Mott, of New-York, was bold enough, a few years back, to try the experiment—but without success. A similar operation has since been performed in Sweden, and with a similar result. I have no disposition to condemn these attempts, because every effort towards saving the life of a fellow-creature, when he must necessarily perish without relief, should be deemed praiseworthy; but I cannot help thinking that the chance of success must necessarily (owing to the great size of the innominata, its contiguity to the heart, and the probable diseased condition of its coats) be so very limited, in most cases, as not to justify the practice. Another objection, and a very strong one, that might be urged against tying the innominata is this—that subclavian and axillary aneurisms have often been cured spontaneously." p. 138—139.

Aneurism from anastomosis. As illustrative of the mode in which, according to Dr. Gibson, this disease ought to be managed after it has attained an inordinate bulk, the following case is detailed.

"Elizabeth Lausher, a married woman, twenty-five years of age, residing in the neighbourhood of Reading, came to Philadelphia in the month of April 1823, anxious to obtain relief for a very large pulsating tumour, which nearly covered the right side of her head, and sometimes bled so profusely from numerous ulcerated spots on its surface, as frequently to endanger her life. This tumour had existed from infancy, but its increase was so gradual, and the pain attending it so inconsiderable, that it gave her little uneasiness. After her marriage, however, and especially during her second pregnancy, (in which she was advanced four months at the time I saw her,) the growth of the swelling was so rapid, its pulsation so alarming, and the hæmorrhages from it so frequent and debilitating, that she was prepared to submit to any operation I might propose for her relief. I was aware at once of the nature of the disease, and saw plainly the necessity of acting promptly and decidedly. To have dissected off a tumour of such magnitude, and so extremely vascular, at a *single* operation, would have been little better than madness. I resolved to proceed in a very different manner, and having placed my patient in a private department of the Alms-House Infirmary, I commenced without delay a series of operations. My first object was to cut off temporarily the chief supply of blood to the tumour. With this view, I made several incisions, each about an inch long, through the scalp, and at some distance from the margin of the tumour, and tied the chief branches of the occipital and temporal arteries, many of which were enlarged to the size of the common carotid. Having in this way encircled the diseased mass, I had the satisfaction to observe the pulsation diminish, and the tumour partially to shrink; the hæmorrhage, also, from the surface had ceased. A slight erysipelas of the scalp followed the operation. This occasioned a week's delay; in the mean time, the blood was evidently finding its way again through the anastomosing vessels to the tumour. An incision was made about two inches long, by a single stroke of the knife, through the integuments to the bone, commencing near the back part of the ear, and midway between the edge of the tumour and the line at which the arteries were taken up in the first operation. An incredible quantity of blood issued in a moment from every part of the wound; in a few moments, however, by the dexterity of Drs. Horner and Lawrence, every vessel was secured. The cut was then repeated to the extent of three inches more, and the vessels in like manner secured. By this time the patient was so extremely faint, as to render it impossible to proceed further; indeed, many of the spectators supposed her to be dying. Without delay, therefore, she was conveyed to bed, and the wound dressed (by interposing lint between its edges to prevent their re-union.)

In ten or twelve days the patient had so far recovered her strength, as to enable her to submit to a further incision of the scalp, commencing at the place where the last operation had terminated. This operation was also continued as long as the patient could bear it, or as was deemed prudent. Lint was then placed in the wound, and the patient put to bed, and carefully nourished for a fortnight, at which time the third and last operation was performed—by dividing the remaining portion of the integuments, and removing the tumour from the bone. This was accomplished with comparative facility, the tumour being by the preceding operations nearly drained of its blood, and almost insulated. Care was taken in separating the diseased mass not to remove the pericranium; the bones, therefore, notwithstanding a great portion of the parietal and occipital was exposed, did not exfoliate, but were covered in a few days by florid and healthy granulations, the edges of the wound gradually approximated, and were so far closed in four or five weeks, as to enable the patient to return to the country, where in a little time longer her health was perfectly re-established, and at the end of the usual period, she was delivered of a promising son." p. 152—155.

In Chapter V. *Injuries of the head* are treated of.

Chapter VI. In this chapter, the much-neglected but important subject of *Diseases of the Ear* is considered. For the proper understanding of these, much may be gained by a simple classification founded upon the different parts of the ear that may be affected. The classification of Dr. Gibson answers every practical purpose, and is about as good as any we have seen.

Diseases of the external ear, and meatus auditorius. The external ear is liable to wounds and frost-bites, &c., by which the whole or the greater part of it may be lost. A loss of hearing does not necessarily follow such accidents, as cases are upon record of persons born without external ears, who nevertheless enjoyed the sense of hearing to a certain extent. The *lobe* is the part of the ear most frequently the subject of disease. In negroes Dr. G. has known many instances of sarcomatous tumours, resembling in shape the prickly pear, arising from the use of brass earings. Encysted or steatomatous tumours are also very common. They generally occupy the centre, and seldom increase beyond the size of a pea. The *meatus auditorius* is liable to several accidents and

diseases. Extraneous bodies, such as beads, peas, worms, insects, &c. frequently get into the meatus and excite much irritation. The *cerum* or wax of the ear frequently accumulates in undue quantity, and thus affects the hearing. *Suppuration* of the membrane lining the meatus, is a very common affection in children, and if long continued, not unfrequently destroys the membrane tympani and small bones of the ear. *Polypi* also occasionally spring from the bottom of the passage, or from the sides of the membrane, and frequently cause deafness by filling up the ear. The meatus is also subject to an *herpetic eruption*, occurring chiefly in scrofulous subjects. The discharge is exceedingly offensive, and often so copious and thick as to close up the passage. Occasionally the eruption extends to the external ear. In some very rare cases there has been known to be a congenital imperfection in the meatus auditorius, originating either from a thin membrane covering the orifice of the passage, or from the whole tube being filled by a tumour, or by a coalescence of its sides.

Treatment. For sarcomatous tumours the only remedy is excision. Encysted or steatomatous tumours are to be dissected out in the same way as when they occur in other parts of the body. Extraneous bodies introduced into the meatus auditorius, may be removed by a slender forceps or a bent probe. When insects find their way into the ear, they may be got out by pouring oil into the ear. They may also be destroyed by the smoke or infusion of tobacco. For hardened wax the best solvents are warm water, and soap and water. *Suppuration* of the living membrane of the meatus auditorius, is to be treated by antiphlogistic remedies, succeeded by moderately astringent injections. For the removal of *polypi* the use of the forceps is recommended; and to remove the remnants of the disease, lunar caustic may be used. For *Herpetic eruptions* the best remedies are the internal use of calomel, and a weak solution of corrosive sublimate as an injection. In cases of *imperforate* meatus auditorius, the passage has sometimes been restored by dividing the membrane which closes it, and afterwards wearing a tent to keep it up.

Diseases of the Tympanum and Eustachian tube. *Otalgia* or ear-ache, is generally the result of an acute inflammation of the membrane lining the cavity of the tympanum. The pain frequently extends from the ear to other parts of the head, accompanied by fever and delirium. If the disease continues for any length of time, suppuration most usually ensues, and matter collects not only in the cavity of the tympanum, but in the mastoid cells and eustachian tube. Generally this matter is ichorous, sometimes sanious, and by its pressure the membrana tympani is destroyed, and discharged along with one or more of the small bones of the ear. From the inflammation attending the disease, the eustachian tube is also frequently obliterated, and from both these causes, permanent deafness frequently follows. Caries of the tympanum and mastoid cells, &c. is a frequent consequence of this disease.

The *eustachian tube* is often closed, independently of any disease of the tympanum, from the sloughing or ulceration which succeeded cynanche maligna, syphilis, the immoderate use of mercury, &c.

"In all such cases, partial deafness ensues, owing to the air within the tympanum being confined, or absorbed, or to the cavity being filled by mucus. The membrana tympani, in either event, is incapable of the requisite degree of vibration, and the patient's hearing is thereby rendered very indistinct, or entirely destroyed. It is not always easy to discriminate between this variety of deafness and that proceeding from other causes. Much information may be gained, however, from accurate inquiries into the history of the complaint, and by directing the patient to close the nostrils and mouth, and blow forcibly with his breath, which, if the eustachian tube be closed, will not enter the cavity of the tympanum and communicate an impulse to its membrane or drum, as generally happens when the guttural extremity of the tube is pervious. Moreover, patients, deaf from closure of the eustachian tube, are seldom disturbed by those unpleasant sounds in the ear which so commonly accompany nervous deafness." pp. 211.

Treatment of Diseases of the Tympanum, &c. In inflammation of the ear, Dr. G. very justly condemns the common practice of making stimulating applications with a view of relieving the pain.

"General and topical blood-letting, purging, blistering, &c. in the commencement of the disease, are the proper remedies. If by these means suppuration be not prevented, and the matter is rapidly accumulating, the surgeon, without delay, should make a small opening with a sharp-pointed probe or couching needle in the membrana tympani, and evacuate the matter; otherwise, the whole of this membrane may be destroyed by ulceration, the ossicula discharged, and the hearing irrecoverably lost. After the inflammation has subsided, astringent injections may be employed to correct and suppress the discharge. If fungous or polypus excrescences sprout from the tympanum and fill up the meatus, they should be removed by the forceps and lunar caustic.

"For the relief of deafness arising from obliteration of the eustachian tube, an ingenious expedient was suggested many years ago, by Sir Astley Cooper—the perforation of the membrana tympani. This operation, as was correctly imagined, served the purpose of admitting the external air to the tympanum, and thereby, for a time, restored the patient's hearing. It was soon found, however, in most instances, that the benefit was temporary—owing to the inflammation excited by the puncture, producing an induration of the membrane, and a consequent loss of vibratory power. The opening in the membrana tympani, in other cases, moreover, was found to close speedily after the operation. For these and some other reasons, the operation is now seldom practised. Should it ever become necessary to resort to it, a small sharp-pointed probe will answer all the purposes of the regular and more complicated instruments—care being taken to select such cases of deafness only, as are dependent upon closure of the tube, and in performing the operation to avoid perforating that part of the membrane to which the handle of the malleus is attached.

"Some of the English and French surgeons have contrived instruments for cleansing the eustachian tube, when clogged with mucus or extraneous bodies. The difficulty, however, of introducing the pipe of a syringe or probe into the guttural extremity of this passage, has deterred most persons from attempting the operation." pp. 212—214.

Diseases of the internal ear. That variety of deafness called *nervous*, may originate from one or other of the following causes. 1. On unusual hardness of the auditory nerve. 2. A diminution of the nerve. 3. A thickening of the membrane of the labyrinth. 4. The formation of a steatomatous or caseous substance within the cavity of the vestibule. 5. Calcareous matter in the vestibule. 6. Malformation of the vestibule, semicircular canals and cochlea.

"If from these, or other causes, nervous deafness should arise, it will be indicated, in most instances, by tinnitus aurium, or ringing in the ears, by unpleasant and peculiar sounds, resembling the dashing of waves, the

murmuring of bees, the roaring of a cataract or water-fall, the hissing of a tea-pot, the rustling of leaves, the singing of a conch or shell, the vibration of the stethescope, and many other strange, and to the patient, unaccountable noises. These symptoms are most urgent during winter, at night, and in cloudy weather, and whenever the patient has taken cold. Most patients, indeed, troubled with nervous deafness, are peculiarly susceptible of cold; from this, and from other causes, there is a diminution of the ceruminous secretion, and, consequently, a peculiar dryness or huskiness of the meatus auditorius. Despondency is a frequent concomitant of nervous deafness." pp. 216.

Treatment of diseases of the internal ear. For confirmed nervous deafness nothing can be done. In the commencement of this affection, it may sometimes be arrested by bleeding, purging, low diet, blisters to the back of the neck, &c. Great care should be taken that the patient do not suffer from exposure to cold; to counteract the susceptibility to cold, Dr. Physick directs common salt to be rubbed upon the skin and head. When nervous deafness is caused by syphilis, which it sometimes is, it may generally be removed by a course of mercury.

We have now given a very full analysis of the chapter on diseases of the ear, not because we think it by any means perfect, but because we are desirous of drawing attention to this important subject. We are much in want of a good scientific treatise on this department of medical science, and we could wish that the task might be undertaken by some competent person.

Chapter VII. treats of *Diseases of the Eye;* but we do not find in it any thing which may not be more advantageously learned in some of the excellent treatises written expressly on this subject.

Chapter VIII. relates to *diseases of the nose and antrum*—as polypus of the nose—ozœna and polypus of the antrum.

Chapter IX. *Diseases of the mouth*—as hare-lip—ranula—malformation of the frænum linguæ—enlargement of the tonsils—elongation of the uvula—Epulis or tubercle of the gums.

Enlarged tonsils. In removing these by ligature, it has been the usual practice to suffer the ligature to remain

for several days until the tumour elongated away. The irritation thus occasioned about the fauces, tongue, and mouth, must necessarily be very great. To obviate these inconveniences, the following method has been proposed by Dr. Physick.

"The operator takes a double canula about four inches long, and passes through it, doubled, a piece of soft, flexible, iron wire, one-twenty-fourth part of an inch in diameter, secures one end of the wire to an arm of the canula, and permits the other end to project about five or six inches beyond the opposite barrel of the instrument. The canula being thus armed, the loop of wire is spread out to a sufficient extent to pass over the tumour, and is bent a little to one side that it may with the greater facility approach its base. An assistant holds down the patient's tongue with the handle of a large spoon, while the operator conveys the wire over the base of the tumour, and taking hold of its projecting end, draws it loosely in order to ascertain whether it is properly fixed. Finding this to be the case, and that the uvula is not included, the end of the wire is then seized with a pair of flat pliers, drawn as firmly as possible, and secured by wrapping it around the remaining arm of the canula. The wire, thus applied, should be permitted to remain on the tonsil *twenty-four hours*, and then disengaged in the following way. The canula being firmly held with one hand, the other is employed in loosening the end of the wire from the arm of the instrument; having accomplished which, the surgeon straightens the wire with the pliers, and pushes it backwards until it is removed from the tonsil. In a few days the tumour drops off entire, or in fragments, and the ulcer left heals without difficulty." pp. 318—319.

Chapter X. *Diseases of the neck*—as extraneous bodies in the œsophagus—stricture of the œsophagus—Extraneous bodies in the larynx and trachea—Ulceration of the Glottis—Bronchocele—Wry Neck.

Chapters XI. and XII. treat of *diseases of the Thorax and Abdomen*—as Hydrothorax—Ascites—Poisons in the stomach—Hernia.

Poisons in the stomach. The notice of this subject by our author is very deficient. The only thing of interest which it contains, is the following statement in relation to the removal of poisons from the stomach, by means of the tube and syringe.

"By whom the idea was first suggested, is not positively known.* Renault, however, in his work on poisons,† expressly recommends an apparatus (somewhat similar to the one now in use) for removing arsenic from the stomach. Dr. Monro, afterwards, in his thesis,‡ gave drawings of instruments for the removal of laudanum from the stomach, and at the same time published a case in which the experiment had been tried—though without success. "Quo laudani effectus leniores essent ei in ventriculum, instrumento in tab. XIV. depicto, per magnam, aquæ tepidæ quantitatem injeci, faucibus simul per oris speculum diductis."§ It remained, however, there is reason to believe, for Dr. Physick to prove the utility of the invention; for until the successful issue of the experiment performed by him in 1812, on a child of three months old, poisoned by laudanum,‖ little importance was attached by the profession either to Renault's or Dr. Monro's proposal. Since that period every apothecary's boy in Philadelphia has become fully acquainted with the operation, which, perhaps, has been performed hundreds of times with the most favourable result. Strange as it may appear, European, or at least British surgeons are just becoming acquainted with the practicability of the operation, for we find from the statements of a Mr. Read, and from remarks in the periodical work called the "Lancet" that the proposal has been considered by Sir Astley Cooper, Messrs. Scott, Jukes, and other surgeons, as perfectly novel, and this so late as the year 1822!!" pp. 362—363.

Hernia. In the treatment of hernia in young subjects, Dr. Gibson recommends the use of the ligature, drawn with sufficient firmness to occasion the parts included to slough, and the edges of the umbilical ring to cicatrize.

"The ligature was frequently employed by the ancients, in the cure of umbilical hernia of *young subjects*, and in modern times has been extensively used and highly extolled by Dessault. In several instances I have performed the operation with complete success, and with little pain or inconvenience to the patient. There is no risk in the operation, provided the surgeon succeeds perfectly in restoring the protruded parts to the abdomen, before he ventures to apply the ligature; which should be of con-

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* A tube and syringe for removing poisons from the stomach, is recommended, as my friend Dr. Coxe informs me, in one of the editions of Boerhaave's Chemistry.

† Experiences sur les contre poisons de l'arsenic, 8vo.

‡ De Dysphagia, Edinb. 1797.

§ De Dysphagia, p. 95.

‖ See Eclectic Repertory, vol. iii. p. 111.

siderable thickness and strength, and drawn so firmly as to ensure the speedy destruction of the parts surrounded by it. After the slough is detached, the sore that remains may be dressed with dry lint or some mild ointment until perfectly healed. For two or three months afterwards it will be proper to support the new formed cicatrix by a compress or truss, to guard against its laceration, and the consequent reproduction of the disease." pp. 408.

Chapter XIII. *Diseases of the rectum*—prolapsus ani—tumours within the rectum—hæmorrhoids—fistulo in ani.

Prolapsus ani. By Dr. Physick this disease is said to have been sometimes cured by confining the patient for a length of time, to a diet of rye mush and sugar.

Chapter XIV. *Diseases of the testicle*—embracing hydrocele—hæmatocele—fungus of the testicle—phymosis—paraphymosis.

Chapter XV. *Diseases of the urethra and bladder*—including stricture of the urethra—fistula in perinæo—enlarged prostate—retention and incontinence of urine—urinary calculus.

Lithotomy. The following precepts in relation to this operation, are well worthy the consideration of the young surgeon, and as such we extract them.

1st, "To examine *minutely* every instrument, before it is used, especially the gorget and staff. If the cutting edge of the former be not extremely sharp, it will not divide the prostate gland, but pushing it forward, will pass between the bladder and rectum, and deceive the surgeon, who, supposing that he has opened the bladder, thrusts the forceps into the wound, makes fruitless efforts to extract the stone, and, perhaps, may tear away, as has happened, the prostate and part of the bladder. If the gorget be not accurately fitted to the staff, it may be discovered during the operation, and at the critical moment of pushing the instrument into the bladder, that the beak is too large for the groove. Under these circumstances, should the operator persevere, in his attempts to thrust the gorget home, great mischief may ensue. The *size* of the gorget must always be proportioned to the age and size of the patient. A gorget, for an adult, should never exceed in breadth three-quarters of an inch, and, for most patients, one five-eighths of an inch will answer. Children seldom require an instrument beyond three-eighths of an inch in width. An unusually wide gorget always endangers the pudic artery. The most experienced lithotomists, however, of ancient and modern times, have always inculcated, and, as I

conceive, justly, a free incision of the prostate and neck of the bladder, rather than tear these parts, in attempting to get out a large stone. How then can this be accomplished unless a *broad* gorget be employed? The answer is very easy. The chief object of the gorget is to make an opening into the bladder; if this opening is sufficiently large to admit the finger of the surgeon and enable him to touch the stone, this is all he can require. Finding, by the feel, the stone too large to come away through the tract made by the gorget, the *curved probe-pointed bistoury* is at hand, and with this the wound may be instantly enlarged to the requisite extent, and without exposing the pudic artery. In running the gorget along the staff, through the prostate and bladder, care should be taken to *depress* its handle, in order that the blade may be sufficiently elevated to pass in a line corresponding with the axis of the pelvis. This the operator sometimes finds it difficult to accomplish, owing to the blade of the gorget being made as broad near the handle of the instrument as at its point, and on this account not calculated to rest in the lower angle of the incision. To obviate this difficulty, I have, for several years past, had the blades of gorgets so constructed, as gradually to taper from the outer corner of the cutting edge to the handle of the instrument.

2d, "If the surgeon from timidity, or any other cause, does not make his incisions in the perinæum ample, but leaves some of the fibres of the transversalis perinæi muscles uncut, he will find, in attempting to extract the stone, great resistance, and a constant tendency in it to slip from the grasp of the forceps. This resistance usually arises from the fibres of the transversalis perinæi alter. In such a case the fore finger of the left hand should be carried towards the bottom of the wound to depress the rectum, while the remaining obstruction is removed by the knife. A wound of the rectum will not prove so serious an accident as some have represented; but it should nevertheless be carefully avoided.

3d, "The lithotomy forceps are, in general, made unnecessarily large and clumsy; so large, indeed, as often of themselves to fill up the opening through the prostate. The teeth, too, on the inner surface of the blades, are often so large, as to act like wedges, and break the stone the moment it is grasped. For a child, a forceps very little larger than the common pocket-case instrument, will serve a better purpose than the one usually employed; and the smallest forceps contained in the lithotomy case, provided the handles be somewhat lengthened, will answer for an adult.* If a stone should be so large as to require breaking, a strong pair of forceps,

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* My colleague in the Alms-House Infirmary, Dr. John Rhea Barton, has invented a pair of lithotomy forceps (with an oval hole in each blade, resembling the midwifery forceps, and not unlike the old polypus forceps of Heister) well calculated, it appears to me, to hold a small stone, and prevent it from slipping.

with a screw in the handles, will prove more effectual than the complicated instrument of Mr. Henry Earle. Although I have had occasion, however, in three instances, to break large stones, I have never experienced any difficulty in effecting it with the common forceps. Frequently, a stone will break under very moderate pressure of the forceps, and when the surgeon is unwilling for it so to do. In this event, great patience and gentleness must be exercised in extracting the fragments by the scoop, and by injections of barley-water. It sometimes happens that one portion of a stone is imbedded in a cyst in the coats of the bladder, while the other projects into its cavity. This happened in a case, upon which I operated last spring, at Alexandria, under the care of two distinguished physicians of that place, Drs. Washington and Sims. Having seized the stone with the forceps, the projecting half broke off, and the remainder, with great difficulty, I was obliged to scoop out of the cyst with my finger. The patient had long suffered from the disease, was greatly exhausted before the operation, and died ten or twelve days after it. Some years ago, I operated on a young man in the Alms-House Infirmary, and took from his bladder a stone about the size of a walnut, and afterwards introduced my finger to ascertain if there were any others left, when to my great surprise, I discovered that the fundus of the bladder, for a considerable extent, was encrusted with calculous matter, which I peeled off in successive layers, some of which were nearly half an inch thick. This patient perfectly recovered. Under circumstances such as I have detailed, the surgeon should never for a moment lose his self-possession, but proceed cautiously and gently, but firmly, until he has effected his purpose. In the common operation of lithotomy, too, it should never be necessary to pull violently with the forceps, but the instrument must be humoured, and its position changed, and twisted gently in a variety of directions.

4th, "The *after treatment* of lithotomy is oftentimes more important than the operation itself; and the surgeon would do well never to operate, unless he could attend the patient throughout the whole course of his confinement. The shock communicated to the system by the severity of the operation, is sometimes such as greatly to endanger the patient's life, and, indeed, some have actually died on the table, or a few hours after—reaction having never been established. So long as this state of the system continues, stimulants must be employed. After reaction takes place, then inflammation must be guarded against, and to prevent this, the antiphlogistic system, to the necessary extent, will be naturally resorted to. pp. 499—505.

Chapter XVI. relates to amputation.

We have now finished our analysis of Dr. Gibson's work, from which we believe we have culled every thing not perfectly familiar to most of our readers. As a treatise on the "Institutes and Practice of Surgery," a title of no very hum-

ble pretensions to be sure, we fear that it is not destined to rank very high: as a *text book*, (a department of medical literature to which our brethren of Philadelphia seem to be very much devoting themselves) it may, and doubtless will be very useful to the students who attend upon the author's oral instructions. At the same time, we think many of the subjects may be much more advantageously studied in other treatises.

Before we conclude, we cannot omit alluding to a circumstance which has struck us very forcibly throughout the whole perusal of this work. And this is, the wonderful self-complacency with which Dr. Gibson is incessantly quoting himself. From this book one would almost be induced to believe, that all the surgical wit and wisdom of the country were concentrated in Dr. Gibson and one or two of his colleagues. Now, although we have no objections whatever to any good opinion which the author may entertain of himself or of his friends, we cannot refrain from telling him, that if he had extended his vision a little beyond the latitude of Philadelphia, if indeed he is capable of such an effort, he might have found some materials, which would not have made his book much worse than it is; at the same time, that he would have shielded himself from an imputation which we shall not at present name.

QUARTERLY HISTORY

OF

IMPROVEMENTS IN MEDICINE AND SURGERY.

Foreign.

ANATOMY AND PHYSIOLOGY.

M. Simon on the Secretion of the Bile.—"The secretion of the bile presents a very interesting problem of physiology, for the solution of which experiments have been made several times, that have proved ineffectual, on account of the difficulties which accompany the ligature of the vessels of the liver. In order to determine whether arterial blood, or blood from the vena porta, furnishes the materials necessary to this secretion, it has been conceived that we must have it in our power to tie either together or separately the excretory canals, and the vessels which convey to the liver two kinds of blood. The ligature of these vessels, which had been judged impossible, may, however, be practised with greater or less facility on certain species of animals; upon rabbits, for example, it is very easy, but on account of the little colouration of their bile, the results afforded are very inconclusive; and, on the contrary, when pigeons are made the subject of experiment, a still greater difficulty is encountered, on account of the hepatic artery. But we can draw from them positive inferences:—

"1st. *Ligature of the Excretory Canals.*—The bile continuing to be secreted, and its evacuation impeded, the liver becomes choked up, and filled with globules of a fine green tint. This colour is diffused over the whole surface of the organ, and effects the adjoining parts. The green tint is the best marked, the older the animal is, and the longer it survives.

"From ten to twenty hours after this ligature, the animal discharges by the anus matter absolutely green, and of the colour of the bile, with which the liver is overloaded. This colouration of the excrements augments in intensity even to death, and satisfies us that the green matter to which it is due exists solely in the cloaca, or that it is deposited by the ureters. This fact, when viewed in connexion with the observations of Messrs. Dumas and Prevost, who have proved that the billiary secretion was increased by the interruption of that of the urine, prove, that the kidney and the liver compensate more or less completely for the excretion of the product of their secretion, when it cannot take place through natural channels.

" 2dly. *Ligature of the Excretory Canals, and of the Hepatic Artery.*—Twelve hours after having fixed these ligatures, the surface of the liver assumes a yellow tint, which colours also the adjacent parts; the canals are overloaded, and announce the presence of bile. Twenty hours after the ligature, the liver is found to contain a great quantity of green granulations, more numerous in the left than in the right lobe; the cloaca contains green matter, as in the preceding case. If the life of the animal be prolonged even to forty hours, the green colour of the liver and of the excrements becomes more deep.

" These last experiments are calculated to prove, that the secretion of the bile continues a long time after the liver has ceased to receive arterial blood.

" 3dly. *Ligature of the Artery alone.*—In this case the liver is not choked up, since the excretory canals are free; but after death, it must be acknowledged, that the secretion did, notwithstanding, take place; for we find bile in these canals, and the matters contained in the intestine present the bilious tint, as in the natural state.

" 4thly. *Ligature of the Roots of the Vena Porta and of the Hepatic Canals.*—The liver is then entirely discoloured, and shows no longer any thing more than a tint of a pale rose colour, like that of the lungs of birds; we do not meet with any trace of bile; the intestine contains only a grey or white pulp; the cloaca is filled with excrements destitute of any mixture of a green colour, and notwithstanding all this many pigeons have survived the ligature even thirty-six hours. If we tie only the principal trunk of the vena porta, and if we suffer the gastro-hepatic veins to enter it, the right lobe which receives them is, after fourteen hours, in the natural state, while the left is discoloured, and presents on its surface some traces of bile.

From these four series of experiments, the results of which accord perfectly together, we may conclude:—

1st. That the ligature of the hepatic artery does not prevent bile being found.

2dly. That the presence of this bile is manifest, when we tie at the same time the excretory canals.

3dly. That it does not appear doubtful but that it is the blood of the vena portæ which contributes to the secretion of bile, since the ligature of this vessel stops this secretion.—*Anderson's Quarterly Journal.*

M. Cruveilhier on the Texture of the Liver.—From injections of liquids, variously coloured, into the vessels of the liver, and the excretory canals of the bile, M. Cruveilhier infers;

1. That the granulations of which the liver appears to be composed, are surrounded with a dense cellular tissue, of a whiter colour than the granulations themselves.

2. That the ramifications of the hepatic artery are spread out in this cellular envelope.

3. That the ramifications of the vena porta surrounds the granulations themselves.

4. That the radicles of the supra-hepatic veins and those of the excretory canals are in the centre of the granulations.—*Ib.*

Pulmonary Absorption.—The important relations of this subject lead us to notice the researches made by M. Piollet, a French military surgeon, a report of which has been made to the Parisian Academy. (*Arch Gén.*) This gentleman has, it appears, made series of experiments to elucidate the subject, of a date more recent than those made by M. Meyer, which were noticed in our number for May 1825. His first attention was to the question of the penetration of water into the air passage in cases of submersion, on which there has so long been a difference of opinion. The fluid selected for the experiments by M. Piollet was oil, as he considered that although the use of coloured fluids enabled the experimenter to ascertain the fact of their penetration into the lungs, it did not give him any power of appreciating the quantity so admitted. When animals were drowned in oil,—dogs, cats, or rabbits being the subjects of the experiment,—he always found from two to four ounces of that fluid in the air-passages; and there was a constant relation between this quantity and the capacity of the respiratory apparatus. The reporters on these trials of M. Piollet think, that the disagreement subsisting on this subject depends on the circumstance of water being found or not found in the lungs of drowned persons, according as such unfortunate individuals have or have not made attempts to breathe after falling into the water. With respect to the obstacle created by this penetration of fluid towards the recovery of drowned persons, M. Piollet has satisfied himself by some further experiments: for instance, he strangled six dogs in the same manner, having previously injected into the lungs of three of them, four ounces of water; and found that the dogs, into the lungs of which such injection was made, ceased to move sooner than the others, and could not afterwards be brought to life, whilst all those of which the lungs were not injected were revived. Directing his inquiries to the manner in which the water which has penetrated into the lungs of drowned persons is removed when they are resuscitated, M. Poillet thinks he has proved it to be by absorption. Having submersed several animals in a solution of prussiate of potash, he was able to ascertain the presence of that salt in the pulmonary veins, in the left cavities of the heart, and in the whole arterial system; and for the purpose of discovering the time required for conveying the fluid employed into the arterial and venous blood, he laid bare the crural artery and jugular vein of a dog, into the lungs of which he had injected four ounces of a solution of prussiate of potash; and withdrawing a little blood every minute from the artery and from the vein, he found traces of the salt to appear at the fourth minute in the arterial, and at the seventh minute in the venous blood. Having killed and opened the animal ten minutes after

making the injection, he found traces of the salt in the right cavities of the heart, but less than in the left, and also in the bronchial glands, in the kidneys, and even in the urine. In the last place, M. Piollet made some experiments tending to prove that pulmonary absorption applies to gases, vapours, and miasmata, as well as to liquids. he confined his head in air charged with turpentine, alcohol, and putrid miasmata, the rest of his body being in a healthy atmosphere, and found, after some minutes, that in the first case his urine had acquired the odour of violets; in the second he experienced all the phenomena of intoxication; and in the third, the intestinal gases and fæces exhaled a decidedly cadaverous odour.—*Lond. Med. Repos. and Rev.*

THEORY AND PRACTICE OF PHYSIC.

[Observations of Dr Baillie, concluded from page 136.]

Of Diseases in the Cavity of the Abdomen.

Ascites.—With respect to this disease I have very little to say. When it depends upon a morbid state of any of the abdominal viscera,—as, for instance, the liver or the spleen,—it is never permanently removed, and very seldom even relieved, till the morbid condition of these viscera is cured, if this event should fortunately take place. Even where the viscera in the abdomen are sound, or at least cannot be discovered by an accurate examination to be otherwise, ascites is rarely, according to my experience, cured by medicine. The ordinary diuretic medicines, as squills and digitalis, have commonly very little effect upon it. The medicines which I think, upon the whole, to have most influence upon this species of dropsy, are supertartrate of potash and small doses of elaterium. In two, or perhaps three cases, during my medical experience, ascites has gradually got well without medicine, after the common remedies had been sufficiently tried and had failed. I can entertain no doubt, from some late publications, that taking away blood from the arm will often be a valuable remedy in ascites, where there has been too much arterial action, or even some degree of inflammation, in the early part of the disease: but of this remedy I have not had sufficient personal experience to enable me to appreciate its value.

Inflammation of the peritoneum.—Where this disease has not been connected with any peculiarity of season, or any epidemical complaint, I have found it to be cured by bleeding and purging, like other inflammations. Upon the whole, however, I think that it has been more relieved by repeated applications of leeches, than by general bleeding. I do not wish it to be understood that general bleeding is of no advantage in peritonitis, for sometimes it produces the greatest benefit. I think, however, that in most cases, more benefit will be derived from the repeated application of leeches, according to circumstances, than from a repetition of the general bleeding. The purgative medicines which have appeared to me to be of most value, are calomel and the neutral salts.

Of some Affections of the Stomach.—There is no complaint more common in this country than an imperfect condition of the functions of the stomach. This generally shows itself by more or less of flatulence, by acidity, by a bitter taste occasionally felt in the mouth, and often by some degree of costiveness. This condition of the stomach generally arises from something wrong in the quantity or quality of the food—from anxiety of mind—and from a due degree of exercise not being regularly taken. It makes its progress very gradually, continues always for some months, and often even, more or less, for years.

The first object of attention should be to remove, as far as possible, the causes which produce it. Every kind of food should be avoided which the patients may have found, from their own experience, to have disagreed with their stomach. Most commonly, animal food that is very fat, or much salted or fried, is difficult of digestion, and should either be eaten very sparingly, or, should be altogether avoided. Young and white animal food is in general more difficult of digestion than what is brown and of middle age. The vegetables which are eaten should be very well boiled, and should be taken sparingly by such persons as are subject to flatulence or acidity. The waxy potato is almost constantly very difficult of digestion, and in general should be avoided altogether. There should never be so much food taken at a time as to give the feeling of fulness or distention in the stomach; and, except under very particular circumstances, there is no advantage in eating oftener than three or four times in twenty-four hours. The best common beverage in disordered conditions of the stomach is water, or toast and water; and three or four glasses of wine may be taken at or after dinner, according to the habits of the patient, or other circumstances. That wine is to be preferred which agrees best with the stomach, of which he is himself the most competent judge. Daily exercise is almost constantly necessary in order to preserve good digestion. Riding on horseback is upon the whole the best, for it gives a motion to the abdominal viscera which no other exercise is capable of; but walking is also very useful. A combination of the two is preferable to either; for riding on horseback chiefly exercises the limbs and the thoracic viscera. Anxiety of mind should be avoided, whenever it can fairly be done; but it is often impossible to take advantage of this remedy.

With respect to medicines, there are none for this complaint which can be called specific. The most beneficial, however, which I have known are rhubarb, and some form of bitter medicine combined with alkalies. Eight grains of rhubarb formed into pills with soap, taken every night at bed-time, and some bitter, as infusion of cascarilla, calumba, quassia, or gentian, with some grains of soda or potassa dissolved in it, taken in the morning and before dinner, will often be very useful in this kind of disordered stomach. These remedies should be continued for five or six weeks at a time, should be omitted for two or three weeks, and occasionally resumed. If the alvine evacuations should be considerably lighter in their colour, or much darker than natural, mercury, given in moderate

doses, and not for so long a time as to injure the constitution, will often be of great use. The large and indiscriminate employment of mercury in complaints of the stomach has, I think, been often very hurtful. Where acidity has been particularly prevalent in the stomach, I have sometimes found it more effectually corrected by the diluted mineral acids than by alkalies. Ten or twelve drops of the diluted sulphuric or diluted nitric acid, mixed with an infusion of some bitter, and taken twice a-day, will sometimes be very beneficial in this condition of the stomach.

There is an affection of the stomach in which the digestion is very imperfect, and in which considerable quantities of a transparent viscid mucus is formed. This often produces nausea, and is occasionally brought up by vomiting. According to my experience, this condition of the stomach has been frequently little benefited by medicine; but sometimes I have found the tinctura benzöes composita of considerable use. A drachm of it may be taken, mixed with water and some mucilage of gum acacia, three times a-day.

There is another affection of the stomach, less common than the former, but far more serious,—viz. where the stomach throws up in large quantity a fluid like cocoa. A quart of this fluid will often be thrown up at a time; and this will frequently be repeated for many days together. This condition of the stomach is sometimes connected with a diseased state of the liver, but sometimes it is independent of it, there being, at least apparently, no disease in this latter organ. In several instances it has proved fatal; but in others, and especially in two cases which I recollect, the complaint subsided for several months at a time, and the persons enjoyed in the intervals tolerable health. This state continued many years, and the patients are still alive. In one case I had an opportunity of examining the condition of the stomach after death. It was very capacious, and was half-filled with this brown fluid, but did not appear to be at all diseased in its structure. The neighbouring viscera, as the liver and spleen, were (as far as I recollect) perfectly sound. The fluid would appear to be formed by a diseased secretion of the inner membrane of the stomach, without any apparent morbid structure.

This disease, according to my experience, is but very little influenced by medicine or by diet. In two or three cases, some benefit seemed to be derived from astringent medicines combined with moderate doses of opium, —as, for instance, from tincture of kino, or tincture of catechu, with a few drops of laudanum, taken three or four times a-day. The bowels should be at the same time kept free from costiveness.

In some cases the stomach will lose almost entirely the power of digestion: the patients will become pale and emaciated, and appear as if they were affected by some fatal visceral disease: at the same time no morbid structure in the region of the stomach or liver can be detected, by the most attentive examination. In some of these cases, the patients have been completely restored to health by a course of the Bath waters.

Of Inflammation of the Bowels.

Of this very formidable disease I have very little to observe. Where the symptoms had been fully formed, the greater number of cases which I have seen have terminated fatally. One case, however, in which the vomiting was of stercoraceous matter, recovered. The chief remedy in this very dangerous disease is bleeding largely, both from the system and topically by leeches. It is very desirable that the inflammation should be subdued, or at least be much lessened, before any active purgative be administered. A purgative during the violence of the inflammation will rarely produce any evacuation, and may even do some injury, by stimulating a part still highly inflamed. Fomentations have been very commonly applied to the belly, and they give some temporary relief. I am inclined to think that cold applications may be useful in assisting to subdue the inflammation; but this I have not hitherto tried. The tobacco glyster, and cold water thrown upon the lower limbs, have in some cases excited the bowels to action, when very powerful purgatives had failed.

Of Dysentery.—In this disease opiate and astringent medicines have sometimes appeared to me to be administered too early. Mild purgative medicines (of which I think castor-oil, upon the whole, the best,) should be administered till the alvine evacuations have become free from mucus and blood, and have recovered in a considerable degree the appearance of a natural fluid motion. Astringent medicines with opium, may then be directed with much advantage. As there is always an inflammatory condition of the bowels in this disease, leeches may be applied to the seat of the sigmoid flexure of the colon, and the upper extremity of the rectum, with a considerable chance of benefit.

Of some Affections of the Liver.

There may be, and often is, a deficiency in the quantity of bile mixed, with the alvine evacuations, without any disease in the structure of the liver. The fæces are more or less pale; but there is no hardness nor fulness in the region of the liver. Every thing there, upon the most attentive examination, is discovered to be soft and perfectly natural to the feeling. Mild purgative medicines, with small doses of the pilula hydrargyri, are commonly very useful in such cases. Four or five grains of the pilula hydrargyri should be given every night for some time, and the purgative every morning, or every other morning. The mercurial medicine should not be carried so far as to make any impression upon the constitution, if this can be avoided: it is only intended to stimulate the ducts of the liver. The best purgative medicine, upon the whole, is the sulphate of magnesia in moderate doses, so as to produce two or three evacuations daily. When the alvine discharges have for some little time resumed their natural colour, the pilula hydrargyri should be given up.

Sometimes the bile discharged from the liver is of a dark colour, and the motions become darker than usual. The intensity of the colour differs very much in different individuals, and occasionally it is nearly as black as ink. The liver at the same time may be, and commonly is, quite sound in its

structure. The treatment should in this case be in a great measure simlar to that in the former, but a little more active. Small doses of calomel may be used instead of the pilula hydrargyri, and the purgative medicines may be a little more powerful. When the colour of the motions has for a short time (eight or ten days) become natural, the calomel may be given up; but the purgative medicines may be continued longer, at somewhat greater intervals—as, for instance, every third day. Where the motions are very green in their colour, magnesia or some alkali may be mixed with the purgatives. In the above cases the Cheltenham and Leamington waters have been often very useful; but I think that many practitioners of the present day have erred in administering mercury too long, and in too liberal doses. When mercury is carried beyond the point that is necessary, it often injures the constitution by weakening it, and by rendering the nervous system very irritable.

There is sometimes a greater fulness, and greater sense of resistance, over the whole region of the liver than natural, with more or less of tenderness upon pressure. This arises from some chronic inflammation of the substance of the liver. In such a case, the repeated application of leeches to the seat of the liver, and the occasional application of a blister, are often of the greatest use. A mild course of mercury should be recommended, so as in some measure to affect the constitution; and this should be administered both externally and internally. It should not however be carried beyond the necessity. Long and repeated salivations will seldom be required, and often have done much and permanent injury to the constitution. When the liver has become soft, has lost its tenderness, and resumed its natural size, the mercury may be given up. If the liver shall not have returned altogether to its natural state, and the constitution appears to be suffering from the course of mercury, a seaton may be inserted under the skin in the region of the liver, and the mercury may be given up or suspended. In some cases I have found a fulness of the liver, which had eluded the effect of mercury, to be removed by a seaton. The administration of purgatives is of great advantage in all such cases, and the Cheltenham waters are often highly beneficial.

Of Abcess in the Liver.—Inflammation of the liver will occasionally terminate by forming an abcess. The abcess will in time break externally, or it will communicate with the lungs, with the stomach, or with both of these vicera. When the abcess breaks externally, the part gradually heals, unless there be something very unfavourable in the constitution; and the patient recovers entirely. When the abcess communicates with the lungs, the matter is brought up by coughing, and the patient, if prudent in the management of himself, and possessed of a tolerably good constitution, will sometimes at last entirely recover. When the abscess communicates with the stomach, the matter is sometimes discharged by vomiting, and sometimes by the bowels. In this case, too, the patient will not unfrequently recover; and the same observation may be extended to an abscess of the liver which communicates both with the stomach and the lungs, although

the circumstances are more unfavourable in this than in the other two cases. In these various cases little benefit is produced by medicine, but great injury may be done by imprudent or unskilful management. The bowels should be kept always free from costiveness: if there be any considerable feverishness, it may be lessened by saline draughts; or, if the constitution be weak, it may be strengthened by the prudent use of tonic medicines. The diet should be light and nourishing, and in general wine should be avoided. The exercise, if the weather be favourable, should be gentle: but it should not be taken at all if the weather be ungenial, or if it be attended with pain or much fatigue. A stimulating diet, too much or too violent exercise, and exposure to a cold atmosphere, may do much mischief, or even lead on to a fatal event.

Of Tubercles in the Liver.—Tubercles of different kinds are formed not unfrequently in the liver, at a middle or more advanced age. They are often connected with an intemperate mode of living, but they will sometimes occur in persons who have passed an uniformly temperate life. They are frequently the cause of ascites, but sometimes they do not produce this effect. No medicines, as far as I have seen, are attended with any permanent benefit in this state of disease. By temperate living, by gentle exercise, and by the bowels being kept rather open, patients will not unfrequently live for some years with such complaints; but I do not recollect any instance of a patient actually recovering from them.

Of Hydatids in the Liver.—I have known only two instances of this disease in the living body. The one was in an old lady, who had been subject from time to time, for many years, to symptoms, very much resembling those of gallstones. At length, after a more severe attack than usual, the constitution gradually sunk, and she died. Cysts containing hydatids were discovered upon examination of the body after death.

The other case was that of a young lady, who had suffered occasionally a good deal of pain in the region of the liver, and at length passed some hydatids by stool. She for the time recovered, but what became of her afterwards I have never learned. It is obvious that the formation of hydatids in the liver, even when the existence of this disease can be perfectly ascertained in the living body, can receive no essential benefit from medicine. If inflammation should take place in the progress of this disease, it may be removed or lessened by taking away blood from the arm, or topically: and if at any time violent pain should occur, it may be mitigated by opium and the warm bath. The bowels should be kept rather open; and there will always be some advantage in patients affected with this disease living temperately. Patients may live many years with this complaint; but if it be gradually making progress, even though slowly, it must, in almost every instance, have ultimately a fatal termination.

Of Gallstones.—The formation of gallstones in the ducts of the liver, or in the gall-bladder, is not a rare disease, and I have known many instances of it. The paroxysms of this complaint are generally attended with exquisite pain; but I have known a few cases where the pain has been moderate.

Some cases I have likewise known where patients have been subject to symptoms of indigestion for many months, without paleness of the stools, yellowness of the skin, or any other symptoms which denote the existence of gallstones; yet this condition of the stomach has ultimately led on to the symptoms of gallstones being formed in the most distinct manner. It is obvious that no solvent can be successfully applied to a gallstone within the living body. While the symptoms of gallstone exist, it must either be in some duct of the liver or in the cystic duct, or in the ductus communis choledochus. But a solvent introduced into the stomach cannot come in contact with a gallstone in any of these situations. As soon as a gallstone drops into the duodenum, where a solvent might reach it, all symptoms belonging to gallstones immediately cease; and for the time the patient becomes quite well. In the treatment of gallstones, therefore, the symptoms can only be mitigated by medicine. If any inflammatory symptoms have been produced, which is sometimes the case, they can be removed or lessened by general and topical bleeding. The exquisite pain which is commonly felt during a paroxysm of gallstones, can be generally mitigated by large doses of opium, by fomentations, and by the warm bath. Purgative medicines should be given, of sufficient power to counteract the effects of the opium. Mercury appears to me to have no power over a pure case of gallstones, unmixed with any fulness or hardness of the liver; and the Cheltenham or Leamington waters are of much less advantage than in the more ordinary cases, where the functions of the liver are merely deranged. No particular mode of life will protect a patient against the recurrence of gallstones; but there is always some advantage in such persons living temperately, and keeping their bowels free from costiveness.

Of some Diseases of the Pancreas.

The pancreas is, upon the whole, less liable to disease than any other important gland in the body. I do not recollect that, in private practice, I have met with one case in which there was satisfactory evidence of the pancreas being diseased; and I have only known of a solitary example of it during the thirteen years in which I was a physician of St. George's Hospital. This case was under the care of another physician,* and the pancreas was not known to be diseased till the patient's body was examined after death. The pain in the epigastric region, sickness, uneasiness or pain in the loins, which belong to inflammation and enlargement of the pancreas, belong also to other diseases, and therefore do not particularly indicate a disease in this important viscus. Were the enlargement so great that it could be ascertained by an attentive examination of the living body, no difficulty would remain in ascertaining the disease. This, however, will very seldom happen; for I have not found a single instance, in all the dead bodies which I have examined, of the pancreas being so large, that it could have been ascertained by the most careful examination in the living body. If the pancreas were to be much increased in size, and the patient much emaciated, so as to ascertain this disease while the patient was alive, it would

*Dr. Hberden, Jun.

probably be in general too late to receive any substantial benefit from medicine.

Calculi formed in the ducts of the pancreas, constitute a still rarer disease than the inflammation or enlargement of this gland. I have not myself met with any instance of it in the living body, nor do I remember to have heard any physician say that he has seen this disease. While the calculi remain within the ducts of the pancreas, it is evident that no solvent could reach them; and, if they should be discharged into the duodenum, there would be a cessation of the disease for a time.

Of some Diseases of the Spleen.

The spleen is much less subject to inflammation than many other of the abdominal viscera. I do not recollect a strongly-marked instance of it in my practice; and I have never met with an abscess in the spleen in all the dead bodies which I have examined. The peritoneum is not uncommonly inflamed in that quarter, and the coat of the spleen is more or less involved in the inflammation. I am not aware that inflammation of the spleen would require a different treatment from that of other viscera.

I have met with several examples of enlargement of the spleen. The enlargement has been very different in different patients. In some the spleen has not been more than twice its natural size, and in others it has been so large as to occupy nearly all the left side of the abdomen, extending from the diaphragm to the pelvis. When the enlargement is so considerable that the lower end of the spleen can be felt under the margin of the ribs upon the left side, there can be no doubt with respect to the disease. The spleen, when enlarged, is always felt to be harder than in a natural state, but pressure upon it with the hand seldom produces pain. An enlargement of the spleen is sometimes followed by ascites; but there will frequently be no dropsy of the abdomen, even where the spleen has been for a long time much enlarged. Where enlargement of the spleen has been connected with ague, it more frequently subsides than in any other case; where the enlargement has taken place independently of this cause, it hardly ever subsides of itself, or is materially diminished by medicine. According to my experience, mercury, administered both externally and internally, produces very seldom any good effect: I have seen, I think, more advantage from a seton inserted under the skin which covers the spleen. In some cases it has appeared to be diminished in size by this remedy, and to be rendered softer: but I do not recollect a single instance, except after ague, in which it has been reduced to nearly its natural size. Temperate living, abstaining from violent exercise, and keeping the bowels open, must be to a certain degree useful in retarding the progress of the disease.

I have not met with any case of hydatids being formed in the spleen, but such a disease now and then occurs. A patient may live very long with this complaint; but it can receive no cure, nor even amendment, from medicine.

Of some Affections of the Kidneys.

The kidneys are more liable to disease than most other glands of the body,

and are more frequently diseased in men than in women. This may arise from greater intemperance in the former than in the latter sex, and likewise from the more violent bodily exertions which men are often called upon to make. I have known a few instances in which the two kidneys entirely lost the action of separating urine; and this has been chiefly in persons advanced in life. The patients soon became very comatose, and died in the course of two or three days. No medicine was of the least advantage; and every case, as far as I recollect, terminated fatally. There is a great difference, in the hazard of a patient's situation, whether the kidneys separate a little urine or none at all. In the first case they generally recover, and in the second very rarely. It is curious that life should terminate so soon when the functions of the kidneys have become totally suspended. A person who receives no nourishment whatever into the stomach, or by any other means, will live much longer.

Of Abscesses in the Kidneys.—When inflammation of the kidney has not been removed by the usual means, an abscess takes place in it. The pus which is formed is sometimes of a common kind, but is often of a strumous nature. It comes away along with the urine, in greater or less quantity; and this circumstance, together with the history of the case, ascertains in the most satisfactory manner the nature of the disease. The kidney in such cases is sometimes nearly of its natural size, but is often much enlarged; and this circumstance can be ascertained by an examination in the living body. Patients will continue to live with this complaint for many months and even for several years. The formation of matter will sometimes be suspended for several months, and patients will recover in a considerable degree their general health. The disease will return, either from imprudence in diet or exercise, or without any known cause, and the patient will become as ill as ever. It very rarely happens that a patient permanently recovers from this disease, and I do not at present recollect an instance of it. Medicines, as far as my experience has reached, do not produce any great or permanent good effect. A seton inserted in the loins, or in the flank of that side where the diseased kidney is situated, is sometimes of considerable use. The uva ursi, and the tinctura benzoes composita, have sometimes been serviceable as internal medicines. The same observations may extend to cooling and mucilaginous remedies. Great quiet of body and uniform temperate living are useful in mitigating symptoms, and in retarding the progress of the disease. A patient labouring under this disease should live almost entirely upon vegetable food, and should abstain from wine and other fermented liquors.

Of Hydatids in the Kidneys.—This is a very rare disease, but I have known two or three instances of it. Its existence cannot be ascertained in the living body, unless an hydatid should occasionally be discharged along with the urine through the urethra. A patient may live very long, perhaps a good many years, with this disease, but it cannot receive any advantage from medicine.

Of Calculi in the Kidneys.—One of the most common diseases of the kid-

neys is the formation of calculous matter in them. This may either be in the form of sand, producing in the kidneys temporary irritation; or in the form of a calculus, which may either produce temporary irritation, or a permanent and fatal disease. When the calculus is small and of a favourable shape, it may pass by one of the ureters into the bladder, and be altogether discharged from the body by the urethra. When the bulk of the calculus is considerable, and more especially if it be of an arborescent form, it cannot pass into the bladder, but must remain in the kidney, or in the pelvis of the ureter very near the kidney, producing there more or less of irritation, frequently some degree of inflammation, and not unfrequently an abscess. The existence of a calculus in the kidneys may be guessed at, with high probability, from the symptoms; but it can only be perfectly ascertained when sand, or small fragments of calculous matter, are occasionally discharged through the urethra. In the treatment of this formidable complaint, symptoms of inflammation, when present, should always be promptly removed by general and topical bleeding, by cooling and mucilaginous medicines, and by mild purgatives. When the inflammation is removed, the proper medicines should be determined by the nature of the calculus, where this can be ascertained. If the calculus be of the common kind, (consisting chiefly of the lithic acid,) magnesia and alkaline medicines should be given, and be continued for a great length of time. If the calculus should consist of the triple phosphat, moderate doses of some of the mineral acids, properly diluted, should be given; and of these the muriatic acid is perhaps the best. I do not recollect any instance in which patients have by these medicines been permanently cured; but I have not unfrequently known the symptoms very much mitigated by them, and even for a time suspended.

Patients labouring under this complaint should live with great temperance, but should adopt chiefly a light animal diet, because if acid be formed in the primæ viæ in considerable quantity from vegetable food, the symptoms of the complaint will probably be aggravated.

Of Hemorrhage from the Kidneys.—I have known a few cases in which blood has been discharged from the kidney, and has passed out of the body, along with the urine. In most of these cases the quantity of blood has been large, amounting often to nearly a pint at a time, so that the mixture of urine with the blood hardly appeared to dilute it. The recurrence of the bleeding is commonly very frequent, and the disease will often continue, with intermissions, for several weeks. The loss of blood must arise from one or more considerable vessels being ruptured in one or both kidneys; but I believe that generally one kidney only is affected. The blood-vessels of the kidney may be so distended with blood, that one or more of them, may burst; or the sharp edge of a calculus may cut through one or more of them, and in this way occasion the hemorrhage. Whether the hemorrhage has been produced in the one way or the other, can generally be determined by an accurate attention to the history of the case.

General and topical bleeding, but more especially the latter, are sometimes of great use in mitigating the disease. Cold applications to the loins, and belly are also very serviceable. As internal medicines, nitre, the di-

luted sulphuric acid, and the tincture of muriated iron, have often produced great benefit. The last medicine has, I think, upon the whole, been the most useful.

The patient should be kept perfectly quiet, the chamber cool, and the diet for a time should consist entirely of vegetable substances. I do not recollect any instance in which the patient has not recovered from this complaint, when it has not been connected with an abscess, or some other formidable disease of the kidney.

Of Diabetes.—I have, in the course of my medical life, seen a good many instances of this formidable disease. Of late years a considerable proportion of such cases have got well under my care, or have had the symptoms very much mitigated. The most successful plan of treatment has been to give considerable doses of opium, combined with rhubarb or some other bitter; fifty drops of laudanum, for instance, may be given three or four times a-day; mixed with some infusion of rhubarb or infusion of calumba. The rhubarb may also be given separately, in the form of pills. Under this treatment the disease will often gradually subside, and at length cease altogether. It is, however, very apt to recur; and therefore this plan of treatment, in more moderate doses, should be continued for some months after the patient is apparently well. Bleeding from the system generally, and topical bleeding from the loins, are often useful; for the blood-vessels of the kidneys in this disease are generally more or less distended with blood. The diet should be temperate, and should consist chiefly of animal food; and the best kind of drink is, upon the whole, Bristol water.

Of a loose Tumour in the Region of the Kidney.—In four or five instances I have felt a loose tumour in the situation of one of the kidneys, which could be easily moved up and down with a slight pressure from the hand. The tumour is of considerable firmness, and has a good deal the shape and size of the kidney. It is attended with very little uneasiness to the patient, and the general health is very little, if at all, affected by it. When felt in women, it has been mistaken for an enlarged ovarium; but it has neither the shape of an enlarged ovarium, nor is it in the situation in which an enlarged ovarium is commonly found. I have not had an opportunity of examining this disease in the dead body; I am therefore not certain about its nature, but I am rather disposed to think that it is a kidney more loosely attached than usual to the subjacent and surrounding parts.

Of some diseased Affections of the Urinary Bladder.

It is not unusual for the urinary bladder to become for a certain time paralytic, and to lose its power of expelling the urine. This is more apt to occur in young women than in any other persons, and for the following reason:—The complaint is generally produced by the calls to evacuate the urine being resisted, so that the muscular coat of the bladder becomes very much stretched in consequence of the accumulation of the urine. By the stretching of the muscular coat, its power of acting is for a considerable time lost, and is only gradually recovered. Young women, from being

long in a carriage or long in company, and from their natural modesty, often resist the desire to evacuate the urine for such a length of time, as to induce a paralytic state of the muscular coat of the bladder. Older women manage this function more wisely; and men are not much exposed to the causes which induce them to resist the desire of evacuating the urine. When this disease has taken place, and is not accompanied with any morbid change of structure in the bladder, the bladder gradually recovers its power by the water being regularly drawn off twice or thrice in twenty-four hours, for some weeks. Women may soon be taught to draw off the water themselves, so that they may avoid the very distressing assistance of a surgeon, as well as have an opportunity of relieving themselves whenever there is the least painful distension of the bladder. Internal medicine is of no use in this complaint: but the diet should be temperate, and drink should be taken sparingly.

The bladder will sometimes have only its sphincter muscle paralytic, while the muscular coat of the bladder shall retain its natural power. This complaint prevents the water from being properly retained; and, when there is a certain accumulation of urine in the bladder, it passes off involuntarily. This species of complaint is more common in persons advanced in life than in young persons, and more common in men than in women. The sphincter muscles generally throughout the body become more weak at an advanced period of life; and the bladder of men is more exposed through life to the causes which impair its powers than that of women. When this disease has taken place, it is seldom entirely cured. It is occasionally benefited by small blisters being applied to the perineum, or near the neck of the bladder. Tonic medicines of different kinds, and proper doses of the tinctura lyttæ, are sometimes attended with advantage.

Of a diseased Secretion from the Bladder.—The inner membrane of the bladder, more especially near its neck, has the power of secreting mucus, and is always secreting it in a small quantity, in order to protect the internal surface of the bladder against the stimulus of the urine. This secretion is sometimes very much increased in persons at a middle or advanced age, and is a good deal altered in its properties. Instead of being in a great degree transparent and void of colour, it becomes opaque and yellow, so as very much to resemble pus. It becomes what is now generally called purulent mucus, and will often be nearly equal in quantity to the urine itself. When the urine has been evacuated, and has been allowed to rest in a vessel for a little time, the purulent mucus subsides from the urine, and often adheres with considerable tenacity to the sides of the vessel. This mucus is often formed without there being any morbid structure in the bladder, or any substance contained in the bladder which produces irritation; but it almost constantly attends, more or less, the presence of a calculus there.

When this complaint is independent of a calculus, it commonly receives but little benefit from medicine. The balsam of copaiba, the uva ursi, and soda, sometimes appear to be useful, but they very seldom produce any

considerable or permanent good. When the existence of a calculus in the bladder is the cause of the disease, the removal of the calculus will effectually cure it.

Of a Calculus in the Bladder.—When a calculus is in the bladder, the disease can in general be ascertained by an accurate attention to the symptoms; but it can always, or almost always, be ascertained in a satisfactory manner, by a sound or catheter being introduced into the bladder by an experienced surgeon. I have known a good many instances in which this disease has been alleviated by medicines, but none in which it has been cured. Mucilaginous substances, fomentations, opiates, magnesia, and alkaline remedies, are sometimes of considerable use in lessening the symptoms. Where the calculus has been ascertained, by portions of it, or by gravel, which may have been occasionally discharged with the urine, to consist of the triple phosphate, much advantage has sometimes been derived from taking moderate doses of muriatic acid properly diluted.

Of a Communication by Ulcer between the Bladder and the Rectum.—I have known two cases of this kind; one of which was in a man, and the other in a woman. They both lived between two and three years, but they died from the consequences of the disease. Both sometimes suffered considerable pain in the very lower part of the abdomen, but they were both often quite free from pain for many hours together. The pulse was sometimes of a natural frequency, and sometimes was accelerated. It hardly ever happened that urine escaped from the bladder into the rectum, but very often air escaped from the rectum through the urethra; and frequently more or less of fæces was discharged by the same channel. Whenever fæculent matter was discharged by the urethra, great pain was felt about the neck of the bladder. It is very obvious that medicine could be of no substantial use in those cases. Opiates, fomentations, and mild purgatives, sometimes produced an alleviation of the symptoms; but the constitution became at length very much exhausted, and the scene was then soon closed.

Of some diseased Affections of the Womb.

One of the most common diseases of the womb is prolapsus uteri. It is in very different degrees in different individuals. In some the womb is only a little lower in its situation than it ought to be, but the mouth of the womb is still considerably within the vagina. In others, the neck of the uterus shall be at the external opening of the vagina; and in a few, a considerable portion of the womb shall be without the body.

According to my experience, this disease, when in a considerable degree, is often very imperfectly relieved. When the degree of it is slight, and the vagina not very relaxed, the complaint may sometimes be removed by a horizontal posture being continued throughout the greater part of the day for several months, by the judicious use of tonic medicines, and by astringent fluids being injected into the vagina twice a-day. In a moderate degree of the prolapsus, pregnancy taking place has often proved the means of curing the disease.

When the prolapsus is in a great degree, both internal and external remedies have been generally of little use. The inconveniences, however, of the disease may in a great measure be prevented by a pessary being constantly worn in the vagina. When the pessary is well adapted to the circumstances, it does not produce pain, and in time the patient is hardly sensible of its presence. I need not say that the pessary should be removed for a few minutes every two or three days, in order that it may be cleaned and not produce irritation.

Of Polypus of the Womb.—This disease, although by no means so common as the former, is not very rare, and I have not unfrequently been consulted about it. If the symptoms be not inquired into with some attention, it may be confounded with the malignant ulcer, or what is usually called cancer of the womb; but a minute inquiry into the symptoms will enable the practitioner, in most instances, to distinguish between the two diseases. When an examination has been made per vaginam, no doubt can remain; and therefore, before an opinion is decidedly given, an examination should always be made.

In this disease no permanent advantage is gained by medicine. The strength of the constitution may be a little kept up by tonic and astringent medicines, and the profuse discharges of mucus and blood may be moderated by the application of cold and astringent fluids: but the disease can only be removed by an operation, which consists in tying the neck of the polypus by a ligature. This can be done safely, and with great dexterity by many practitioners in midwifery. In a few days after the operation, the polypus drops off, and the patient gradually recovers her usual health. In many instances the polypus does not return; but a new polypus is occasionally formed, which in due time may be removed by a similar operation.

Of Cancer of the Womb.—This disease is not uncommon, more especially at the middle and more advanced periods of life, and I have frequently been consulted respecting it. I have never known any medicine produce the least real amendment of the disease. Opium and other sedatives will not unfrequently relieve the greater attacks of pain; and in that way will prevent the constitution from being so soon worn down by the disease. It is to be observed, however, that different women suffer naturally very different degrees of pain in this fatal disease, and that its progress is much more slow in one woman than another. The diet should always be very temperate, consisting chiefly of vegetable substances, and the patient should abstain from wine and other fermented liquors.

Of an Enlargement of the Womb.—This disease is not uncommon, although by no means so frequent as cancer of the womb. It is more apt to occur at or near the middle period of life than at any other, and may be distinguished by a moderate attention to the circumstances of the case. There are considerable mucous discharges by the vagina, as in some other diseases of the womb, and the monthly evacuations are profuse. When the disease has made some progress, a tumour of a pyramidal shape, and of considerable hardness, may be felt immediately above the pubes. The neck

of the uterus is likewise found to be enlarged, by an examination per vaginam. These circumstances sufficiently characterise the disease. It generally continues for many years, and the general health is often not much affected by it. In the course of my experience, I have known three cases of this disease cured by medicine. Five or six grains of the pilula hydrargyri were directed to be given every night for many weeks; from half a pint to a pint of decoction of sarsaparilla was ordered to be drank daily; and a large mercurial plaster was applied over the tumour and the whole lower part of the abdomen. The disease in these instances gradually subsided, and at length disappeared altogether. One of these patients, who was about thirty-five years of age, afterwards became pregnant, and bore a very healthy child.

Of some diseased Affections of the Ovarium.

The most common disease of the ovarium is that of its being dropsical. It may take place at almost any period of life. It is not unusual in young women, and often occurs about the middle age. This disease may, in general, be readily distinguished from ascites, by an examination of the swelling, which is almost constantly more or less uneven upon its surface, and often more or less hard in different parts of it. Sometimes, however, in dropsy of the ovarium, when the disease is of considerable standing, the swelling is uniform, and a sense of fluctuation is felt upon striking the tumour with the hand, almost as distinctly as in ascites. Under such circumstances, the two diseases will be distinguished from each other by inquiring accurately into the history of the case.

I do not recollect any instance in which dropsy of the ovarium has been materially diminished by medicine. I have long, therefore, given up the trial of active remedies in this disease, which I have found to be ineffectual, and sometimes injurious to the constitution. I have contented myself with keeping the bowels regular, and with directing such diuretic medicines as would not impair the general health. I have not found mercury, even when continued for several months together, and having its full influence upon the constitution, produce a cure, or any material change in this disease. The disease will sometimes remain stationary for a good many years, and the general health will be very little impaired by it. In one instance, after it had existed for nearly thirty years, the disease disappeared spontaneously, and the lady, who is still alive, remained afterwards in good health. In three cases, where the women were young, and the dropsy confined to one large cyst in the ovarium, I have known them to be effectually relieved by tapping, and the disease not to return for several years. In one of these the dropsy did not return for ten years. Where the patient is young, and dropsy of the ovarium under favourable circumstances, it is always worth while to make a trial of this remedy. When the dropsy of the ovarium is composed of several cysts, the disease may be partially relieved by tapping; but it almost constantly returns, and after a certain time very rapidly, so that there is only a short interval between the opera-

tions. Still, however, some relief is afforded by each operation; and patients will be ready to undergo the operation for this relief every two or three months for several years.

A firm swelling, about the size of the fist or a large orange, is sometimes to be felt in the situation of the ovarium, either upon the right or the left side of the abdomen. It will sometimes remain stationary, will sometimes go on enlarging to a much greater size, and is not, as far as I have seen, suppressed by any remedy. This solid structure of the ovarium is found not uncommonly blended with the dropsical cysts which have been lately mentioned.

SURGERY.

Dr. Barry on the Application of Cupping-glasses to Poisoned Wounds.—The following conclusions are taken from the Report of a Committee of the Academie des Sciences, appointed to examine a Memoir by Dr. Barry on the experiments made by him on poisoned wounds:—

"1st. That the immediate application of a cupping-glass to a poisoned wound, will prevent the absorption of the poison, and avert all untoward accidents.

"2dly. That the application of a cupping-glass to a poisoned wound, even after a part of the poison has been absorbed, and has begun to produce its proper effects upon the system, will arrest the progress of these events, and prevent their recurrence so long as it is permitted to remain on the part.

"And, 3dly. That after the cupping-glass has been applied to a poisoned wound for a certain time, the poison may be removed from the surface, and all unpleasant consequences averted, by simply washing the part with a little water.

"The accuracy of these statements was fully established before the committee, by experiments performed with various poisons on dogs and rabbits, The influence, therefore, of atmospheric pressure on the process of absorption, may now be considered as incontestably proved; and the establishment of this fact may, perhaps, be regarded as a discovery, notwithstanding the ideas previously put forth by others on the subject, and the empirical practice of sucking poisoned wounds, which has been so long known to the profession."—*Anderson's Quar. Journ.*

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*Wound of the Head.**—On the 15th May 1825, there was conveyed to the Hospital of the Guard, a soldier of the 2d Regiment of Infantry of this corps, named Claude L——, aged 27 years. He had received, in a duel, the same day, a cut with a foot soldier's sabre, which had divided, along with the soft parts of the right temple, a portion of the os frontis, all the anterior inferior angle of the parietal bone, and a small corresponding portion

* Substance of Observations communicated to the Philomathic Society of Paris, relative to a wound of the Head. By Baron Larrey.

of the great wing of the sphenoid, in such a manner as to produce an osseous fragment of an oval form, about 2¼ inches in length, by one in breadth. The external lamina of the dura mater had been cut, and there was an equal injury done to the two principal branches of the middle meningeal artery. In short, the patient, upon receiving the injury, had fallen down senseless.

After the first assistance had been afforded him by the surgeon of the regiment, he was removed to the Hospital, where he arrived in a state of profound intoxication, and bathed in his blood. Notwithstanding, we proceeded in the dressing of his wound. After having extracted the fragment severed from the cranium, which still adhered by some fibrous portions of the temporal muscles, it was conceived, that, by means of a compression made with tents of lint, we might be enabled to stop the blood, which was supplied by arteries situated higher up. But some days after, when the suppurative process took place, the hemorrhage was renewed with redoubled violence. This incident occurred during my visit on the 19th. We lifted up with gentleness all the dressings, and directing our attention to the osseous furrows of the parietal bone, in which the two divided arteries were concealed, placed upon them a small plate of bent iron, red hot, which instantaneously stopped the hemorrhage. The wounded man did not feel the application of the heated iron, although we had introduced it about one fifth of an inch deep between the dura mater and the cranium. The dressings were then made with security.

The compression which the plugging had produced upon the brain, had thrown the patient into a state of heaviness; nevertheless he did not manifest any signs of hemiplegia. Being bled from the jugular vein, and cupping-glasses having been applied to the nape of the neck, and between the shoulders, these transient symptoms, depending on the engorgement of the cerebral vessels, were dissipated. After the cauterization was performed the patient became calm; the suppuration of the wound was quickly re-established, and all the functions were performed without any apparent obstacle. Thus, at length, every thing announced an auspicious termination, when, towards the fourteenth day of the accident, the patient suddenly manifested symptoms which indicated the greatest impediment in the circulation, such as smallness of pulse, which was felt like a thread, and presented a marked intermission at each third pulsation. The patient felt a kind of oppression in the precordial region, where we could detect with difficulty very slight pulsations of the heart. He uttered frequent sighs, and was annoyed by an uneasy, troublesome, and permanent weight in the head, which he could not support when lifted up. However, his moral and sensitive faculties were preserved entire; he answered with correctness to the questions asked him, and followed with ease the subject of a discourse. The dressings of the wound were made without pain to him.

We found out that a small abscess had been formed at the opening

which had been made with the lancet in the jugular vein. We opened it, and discovered that its seat extended throughout the whole extent of this vein, which, notwithstanding, appeared to us to be obliterated. But it is probable, that, in the first course of the formation of the abscess, the purulent matter had penetrated into the tube of this vein, and had passed, along with the blood, into the right auricle of the heart. The fact is, that the signs of the circulation of the blood were progressively lessening; the pulse and the heat appeared entirely gone, although the patient still spoke and asked with anxiety for an emetic, to relieve him from the weight which unremittingly oppressed him in the region of the heart, to which, without ceasing, he applied his hand. In short, he died on the night of the 29th or 30th of May, after having had several convulsions.

Dissection.—At the opening of the body, made twenty-four hours after death, a complete rigidity existed in all the limbs; the face was the color of marble, and there was an injection of black blood into the vessels of the conjunctiva.

The cranium having been sawed off, and its left half examined, we observed, on detaching the dura mater from the internal surface of its osseous covering, that the portion of this membrane corresponding to the opening which the piece carried off by the sabre had left, was covered with fleshy excrescences, in which was buried a plate of the internal table of the parietal bone. This membrane presented elsewhere no trace of inflammation, not even at the point of cauterization made upon the cut extremities of the meningeal arteries. The sinus of the dura mater, and the vessels of the pia mater, were gorged with a black and liquid blood; yet this serous envelope, as well as the brain, showed no sign of inflammation The lateral ventricles displayed very little serum, but we discovered about three ounces of this fluid under the two lobes of the cerebellum, aud in the spinal canal. The substance of the brain had acquired a little more density than we had observed in it in the healthy state.

On opening the thorax, we observed the lungs pressed down, and of a greyish color. The total mass of the heart had acquired a considerable volume, so as to fill the whole cavity of the pericardium, which was almost wholly deprived of serum. On opening the right auricle, we were astonished to find it filled and distended by a yellowish, albuminous, concretion, very solid, and fixing itself by a thick pedicle to the two venæ cavæ. There was neither blood nor coagulum in the ventricle of the same side, nor any on that of the left side; although we again met with it in the curvature of the aorta, and at the origin of the principal branches of this artery.

The viscera of the abdomen showed nothing remarkable.

After these facts, it is evident, according to M. Larrey, 1*st*, That the cauterization of the meningeal arteries did not, and indeed could not, be productive of any untoward accident; and that this is the most easy, the

the most simple, and surest mode of stopping the hemorrhage of such arteries as ramify in the furrows of the interior of the cranium.

2ndly, That the death of the patient ought to be chiefly attributed to the obstacles that the black blood encountered in the passage to the pulmonary ducts, and to the successive and gradual stoppage which was put to the general circulation. It is, indeed, to this cause that we must refer the passive yet uninflammatory obstruction of the cerebral vessels, and the eventual extinction of the vital principle.

But, What have been the causes of the formation of those albuminous concretions? This soldier had certainly made great use of brandy, and when he entered the hospital he was in a state of intoxication. It is probable, then, that he must have succeeded in procuring spiritous liquors during the course of his illness.—*Edinb. Journ. of Science.*

CHEMISTRY.

On the presence of Mercury in Urine.—Dr. Cautu, of Turin, has detected the presence of mercury in the urine of persons under the action of mercury. He collected 60 pounds of urine, voided by syphilitic patients who were employing mercurial frictions. It very speedily became alkaline, and deposited an abundant sediment, which was collected on a filter. The clear liquid was subjected to various trials, but presented no trace of mercury. The precipitate, mixed with an equal weight of carbonate of potash and powdered charcoal, with sufficient water for making it into a paste, was heated gradually to redness in a glass retort, the beak of which was dipped into a recipient filled with water. At the close of the experiment, a pulverulent matter appeared at the bottom of the water, which, after being dried, yielded globules of mercury from mere pressure. The neck of the retort contained also a number of small globules.—*Ann. de Chim. et Phys.* vol. 27.

Cystic Oxide Calculus.—The occurrence of the cystic oxide calculus appears to be more common than was at first supposed. Our readers will remember, that this substance was first noticed by Dr. Wollaston, who published his description of it in the Philosophical Transactions for 1810. He had seen at that time only two instances of it; but several cases have since been met with, from which it is probable, that they will more frequently be found whenever they shall more generally be looked for.

The three cases mentioned by the late Dr. Marcet, in his Treatise on Calculi, as having fallen under his own observation, are interesting and instructive. They show that the formation of cystic oxide, contrary to the supposition from which its name was derived, may take place in the kidneys. For, in one of the cases, the descent of a stone from the kidney to the bladder was distinctly indicated by the symptoms; and, in the two others, cystic oxide calculi were actually found in the kidney after death. The formation of cystic oxide, according to Dr. Marcet, is usually connect-

ed with renal disorders; and he conceived that these calculi were peculiar to the kidney rather than to the bladder. Two of Dr. Marcet's cases occurred in brothers; whence it seems probable that the cystic oxide diathesis may be of an hereditary nature.

We have made these observations as preliminary to the history of a case, the first part of which is already before the public. We allude to the following letter from Professor Stromeyer to Mr. Noehden on the subject of cystic oxide, published in the eighth volume of the Annals of Philosophy, New Series. He states, that "he had some time ago the great satisfaction of discovering in gravel from the human body Dr. Wollaston's cystic oxide; and afterwards, in the urine of the same patient, who is afflicted with the stone, the same substance in a considerable quantity. In this urine, the uric acid was almost totally wanting, nor was the urea found in it in natural quantity. As the cystic oxide has hitherto not been found in any human concretions any where but in England, and has as yet been no where observed in the urine itself. I wish you, if you should see Dr. Wollaston, to mention this to him at the same time respectfully remembering me to him. I have no doubt this intelligence will interest him. I mean shortly to publish a brief notice upon the subject. Last year M. Lassaigne, of Paris, also found cystic oxide in a stone from the bladder of a dog."

We are happy in being able to give the following particulars relative to this case, which we state on the authority of Dr. Turner, who has lately received an account of it from Professor Stromeyer. In consequence of suffering from symptoms of stone in the bladder, the gentleman above alluded to submitted to the operation of lithotomy, and three cystic oxide calculi, were extracted. It is remarkable that a sister of this gentleman has likewise been subject to a similar complaint, having once passed a stone by the urethra, which proves, on examination, to be cystic oxide.

This is one of the most instructive instances of cystic oxide hitherto published. We here detect Nature in the act of forming the calculus; the cystic oxide is found copiously in the urine itself, it is deposited in the form of gravel, and ultimately gives rise to a regular stone. It is most probable that the formation of such calculi is always preceded by the presence of cystic oxide in the urine itself; and we should expect from this circumstance, that the deposition may take place in any part of the urinary passages. In the present case, the calculi seem to have been formed in the bladder. The tendency of this disease to attack more than one member of a family, noticed by Dr. Marcet, is also confirmed.

Is cystic oxide foreign to healthy urine, or does it exist in it naturally in small quantities? We are not aware that the urine has been examined with the view of deciding this point, or that the question itself has been distinctly stated. From the difficulty of separating animal principles from complex animal fluids, it is obvious that a substance like cystic oxide, which is held in solution by so many re-agents, may easily have been overlooked.—*Anderson's Quar. Journ.*

OBSTETRICS.

Mr. Fawkes' Case of an Osseous Tumour in the Uterus.—"A lady, 69 years of age, was attacked with symptoms of strangulated hernia, which, notwithstanding the reduction of the intestine, on the following day proved fatal, in about thirty hours. On examination after death, the usual appearances of extensive peritoneal inflammation were found, but the state of the uterus attracted more attention, as well on its own account, as because no suspicion seems to have been previously entertained of any particular disease in that organ:—

"The following description of the state of this part is taken from the report of Mr. Rose, by whom the body was examined.

"The uterus projected into the middle of the cavity of the pelvis, in a pyramidal form, and seemed at first to consist of one entire mass of bone. On taking it out of the body, however, the anterior part was found still fleshy, and on dividing this, the cavity of the uterus was also found perfect, though much compressed and reduced in extent; but behind this cavity, and imbedded in the substance of the uterus, a spherical mass of bone was found, as large as a pullet's egg. This mass consisted, as it is stated, principally of phosphate of lime, which, from the arrangement of the particles, seemed to the reporter to have been originally deposited in a tubercle, similar to that about to be described. Imbedded also in the substance of this organ, and a little below one of the Fallopian tubes, one of the hard rounded tubercles so often met with in the uterus, was also found. It was of a white appearance, as large as a hazel nut, and when cut into, exhibited the common structure of these bodies, being intersected by membranous septa. It is proper to add, that this lady had been the mother of three children, the youngest of whom, at the time of her death, was thirty-five years of age. Nor must it be omitted, that an oval pessary was found in the vagina, which, judging from its appearance, and the intelligence obtained from one of the family, had remained there, in all probability, for a number of years, entirely forgotten, as it would seem, by the patient herself, and by those around her."*Ib.*

Dr. L. Frank's Case of Rupture of the Uterus and Cæsarean Operation.—"Angelica Grossi, aged 44, a native of Parma, and the mother of five children, was taken in labour of her sixth child at the beginning of the ninth month of pregnancy, August the 9th, 1817. A midwife was called, who afforded her the necessary help; but as the patient was standing up, she was suddenly seized with vomiting and faintness, and was therefore immediately conveyed to bed by the midwife and attendants. At the instant she was laid on the bed, she felt something give way in the abdomen, and then, to use her own expression, it appeared to her as if there were two children in the womb. Under these circumstances, a surgeon was sent for, who recommended to her rest, as he conceived the sensations of the woman arose from the motions of the fœtus during the act of vomiting. But the

midwife, finding that the abdomen was more and more distended, that the vomiting continued and the breathing was difficult and interrupted, sent for Dr. Joseph Rossi, professor of midwifery. Professor Rossi, on a minute examination, decided that the uterus was ruptured; and after consulting with his father Dr. Francis Rossi, and other practitioners in the town, he, in common with his colleagues, decided that the Cæsarean operation was absolutely indicated in the present case. The operation was performed two hours after the rupture of the uterus is supposed to have taken place, by Professor Cecconi, in the presence of the two Drs. Rossi, Professor Pieztti, and others. The incision was made on the left side of the abdomen just in the spot where the feet of the child could be felt. After the incision was made, the feet immediately presented themselves to view; and the living child, together with the placenta, were then removed. Forty days after the operation, the patient was perfectly restored, and able to walk out. Her menses some time after this appeared; and in the space of three years from this period, the same woman was delivered of a seven month's child, which lived fourteen days. Over the spot where the incision was made in the abdomen, a cicatrix of the size of an apple remained, which, although it could never be completely healed, caused the patient very little inconvenience."—*Ib.*

MEDICAL JURISPRUDENCE.

School for Instruction in Legal Medicine.—An interesting discussion was lately had in the Royal Academy of Medicine at Paris, on the expediency of petitioning Government to found a school for this particular purpose. Dr. Dariste of Bordeaux, appears to have proposed it to the minister of the interior, with a particular reference to the wants of the French Colonies. According to him, the crime of poisoning is very common, while there are few, if any persons of sufficient chemical knowledge, to detect the substances employed, and thus to discover and punish the guilty. Orfila, Pelletier, Caventou, and Pelletan, warmly supported the plan of Dr. D. but suggested that it should be so enlarged, as to educate persons not only for the colonies, but also for the kingdom of France itself, and who might be attached to the tribunals of justice. During the discussion, the importance of the subject appears to have enlarged the views of the members, and a still more complete and extensive institution was suggested by the committee to whom the subject had been referred. They propose the establishment of a school, where toxicology, medical jurisprudence generally, and medical police shall be taught, while the courts of justice and government are not to consult any physicians on questions relating to these branches, except such as have been thus educated.

We are happy to observe, that this important subject is attracting attention in France, for we are fully convinced that criminal justice can never be properly or uniformly administered, unless a part at least of the medical profession are more fully instructed in legal medicine.

Effect of various metallic substances on animals.—Gmelin, Professor of Chemistry at Tubingen, has lately published a series of experiments made on animals, with several metals, and their compounds. The action of some of these had never previously been ascertained. We add a short abstract of the most interesting results.

Barytes. All its soluble salts are violent poisons. They act particularly on the spinal marrow, and destroy the irritability of the voluntary muscles, but not of the involuntary. A slight inflammation of the stomach is also produced. The sulphate of barytes is inert. Sulphates are the proper antidotes against the salts of Barytes.

Strontian. The Hydrochlorate, Carbonate, and Nitrate. The last of these is the most active. The Diarrhœa that it excites, in the opinion of our authors, prevents its deleterious effects. Two drachms of the hydrochlorate produced no sensible results on animals, and half an ounce was necessary to cause death.

Chrome. Chromate of Potash excites vomiting in dogs, but does not seem to be destructive to life, except in large doses. When introduced into the cellular substance, it causes great wasting, inflammation of the conjunctiva, and the excretion of a bloody viscosity from the lungs. A species of hemiplegia precedes the fatal cases.

Molydena. The molybdate of ammonia when taken into the stomach, excites vomiting and purging; introduced into the vascular system, it produces a lasting paralysis. To rabbits it was fatal; inflammation of the stomach and convulsions being the precursors.

Tungsten. A very harmless substance. The tungstates of ammonia and soda produced no effect on dogs, but in rabbits, in large doses, it excited a slight inflammation of the stomach, and by its sedative influence, paralysis and death.

Tellurium. The oxide caused vomiting in dogs.

Titanium. A drachm of the acid given a dog, with his food, produced no effect.

Osmium. The oxide of osmium acts as an active emetic; it is not however a violent poison, as rabbits, who do not vomit, survived until after repeated doses were given. On examination, the œsophagus, stomach and intestines, were found as if burnt, covered with a hard, black incrustation. Dr. Gmelin states that the oxide is reduced by organic substances.

Platina. Its salts excite very violent inflammation, vomiting and bloody discharges. When introduced into the circulation, the rectum and bladder also participate in the inflammation.

Iridium. Its insoluble salts have no effect, its soluble ones excite vomiting and purging in dogs, inflammation of the stomach and death in rabbits. When introduced into the blood, no effect is at first perceived, but at an uncertain time, death takes place suddenly, owing probably to the destruction of the instability of the heat.

Rhodium. No sensible effect when taken into the stomach.

Palladium. The hydrochlorate, when injected into the vascular system causes instant death. When taken into the stomach, it excites vomiting

and purging with dogs, but rabbits sink slowly under its effects, inflammation of the stomach, passing into gangrene is found, along with inflammation of the bladder and bloody urine.

Nickel. The sulphate produces vomiting and sudden death, preceded in rabbits by convulsions: no effect from introducing it into the cellular tissue.

Cobalt. Similar to nickel, except that its introduction into the cellular tissue excites vomiting.

Uranium. No effect except in large doses, and then vomiting in dogs, and slight inflammation in rabbits.

Cerium. In large doses the hydrochlorate is fatal, by apoplexy.

Iron. Contrary to the experiments of Smith and Orfila, Professor Gmelin found that twenty grains of the sulphate, injected into the jugular vein, produced no injurious result.

Manganese. The sulphate when injected into the vascular system, acts particularly on the liver, inflames it and increases the secretion of bile.—*Bulletin des Sciences Medicales.*

Lime Water a Test for Arsenic.—The following process for the detection of arsenic in cases of poisoning, is the joint production of Rose and Berzelius:—"Cut up the coats of the stomach, and place them in the liquid, which is boiled with a few drachms of caustic potash, in order to dissolve any arsenious acid that might be contained in it. The solution obtained is filtered, heated till it boils, and during the boiling mixed with nitric acid, which is added in small portions as long as any thing separates, and till the liquid has become strongly acid, clear, and of a bright yellow colour; it is filtered while hot; afterwards nearly, not completely, saturated with carbonate of potash, and made to boil, in order to expel the carbonic acid; then it is boiled with clear lime-water as long as any precipitate is formed; the lime-water first saturates the excess of acid, and then precipitates with the arsenious acid as arsenite of lime, and with the phosphoric acid and other animal substances decomposed in the nitric acid. If, instead of saturating the acid with lime-water, you add first caustic alkali till the liquid becomes alkaline, and then add lime-water, no precipitate will be formed, because the arsenite of lime is held in solution by the alkali.

"This statement of the solubility of arsenite of lime in a solution of alkali being in contradiction to certain facts, M. Schweigger was induced to examine the circumstances more minutely, and was ultimately led to the following explanatory experiment:—Prepare an arsenical liquid, pour it into three glasses, and add to one portion an excess of caustic potash: to the second, excess of caustic soda; and to the third, excess of caustic ammonia. On adding lime-water, a deposite of arsenite of lime will be formed equally in each of the glasses. Now add to each a few drops of acid, (for instance, nitric acid,) yet so that in all the alkali shall predominate; whilst no solution of the precipitate will take place in the glasses that have the potash and soda in them, it will immediately begin in that

with the ammonia; and all the arsenite of lime will be finally dissolved, although the ammonia be not saturated by the acid which has been added. Of course, the solution will take place in the three glasses when any acid is in excess; yet, on saturating the acid with alkali, the precipitate will be re-formed immediately in those glasses that contain the potash or soda, but not in that which holds the ammonia, however one may neutralize the liquid.

"By putting muriate or nitrate of ammonia into a liquid containing arsenic, and adding lime-water in any quantity, no precipitate will be formed, even though heat be applied. Thus it will be seen, that it is not the ammonia, as caustic alkali, which retains the arsenite of lime in solution, but it is the presence of a soluble salt of ammonia which prevents the formation of the deposite; and if, instead of ammonia, caustic potash or soda be used in the process described by Berzelius, then lime-water will instantly form the precipitate of arsenite of lime."—*Anderson's Quar. Journ.*

Domestic.

Account of a case of Amputation at the Shoulder Joint, in an extract of a letter from Dr. John Wagner, of Charleston, S. C. to his friend Dr. J. Kearney Rodgers of this city.

A negro man in the country was bitten by a rattle snake in the fold of his right arm; a ligature was applied around the arm, near the insertion of the deltoid, and kept on 23 hours. The whole limb was in a state of mortification when I saw it, on the 11th day, and on the 12th I removed the arm at the shoulder joint. On the 7th after the operation the ligature came away, and the patient was able to sit up. To-day, the 15th after the operation, the patient is doing well, and is able to walk about his room.

Account of a Case of injury of the Head.—By JOHN W. GLONINGER, M. D. of Lebanon, Pennsylvania.

In the afternoon of Thursday the 1st of December last, a son of Mr. John Stoever, aged ten years, received a kick from a horse above the ear, and was taken into his father's house as lifeless; but by the time the family physician, Dr. Reidenaur, arrived at his residence, a few miles from this place, he had so far recovered as to able indistinctly to articulate. He was called in the evening, and upon examination of the wound of the scalp, he found that a small portion of the cerebrum had escaped, in consequence of the cork of the shoe having penetrated through the squamous part of the temporal bone of the left side. He abstracted a considerable quantity of blood from his arm, and simply dressed the wound. In the morning following, he requested me to visit his patient with him. I complied with his desire, and upon dilating the wound we could only discover a fissure about an inch in length, and extending directly upwards from the place penetrated.

The orifice made by the cork of the shoe, in appearance exactly resembled that of a gimlet, and in size did not exceed the sixth part of an inch; but its depth was such as to have pierced through the membranes and into the substance of the brain; and during the night, there was again at least a large tea-spoonful of it discharged, which was in contact with the dressings in the morning.

As there were no symptoms whatever of compression of the brain, the boy being as rational then as he was previously to the accident, the application of the trephine was deemed both unwarrantable and unnecessary, and the only danger we immediately apprehended was inflammation of the brain and its meninges, which was obviated by rigorously pursuing the antiphlogistic treatment. In regard to the local treatment, we availed ourselves of Dr. Mott's practice as detailed in his "Memoir on the subsequent treatment of injuries of the head."*

Our little patient, to all appearances was daily improving, and great hopes were entertained of his recovery, as he was able to walk about the room in which he was confined, and as sensible as if nothing had happened to him, until the 19th day, when very suddenly he was seized with a spasmodic affection of the head and superior extremities, that assumed a tetanic character, and in seven hours thereafter he expired.

However desirable autopsical examinations are in disclosing the morbid appearances of the various parts of the body, we were nevertheless deterred from proposing one from a conviction that they had imbibed the prejudices which so generally prevail here against them. Had we even particularly desired it, we are confident it would have been peremptorily denied.

Although this case terminated unfavourably, yet as it possesses some singularity on account of the boy retaining his intellectual faculties soon after the occurrence of the accident, until the hour of his death, and, when, notwithstanding a portion of the brain had been discharged, it is supposed to be sufficiently interesting to render it not wholy unacceptable to the medical public.

QUARTERLY BIBLIOGRAPHICAL NOTICES.

1. *A Lecture delivered at the opening of the Medical Department of the Columbia College, in the District of Columbia; March* 30, 1825. By Thomas Sewall, M. D. Professor of Anatomy and Physiology. Second edition. Washington, pp. 44. 1826. (From the author.)

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2. *Memoir on the Topography, Weather, and Diseases of the Bahama Islands.* By P. S. Townsend, M. D. New-York, pp. 80. 1826.

About one half of this memoir was originally published in No. XI. of this journal, and contains an account of the weather and diseases of Nassau, in

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* Transactions of the Physico-Medical Society of New-York.

the Island of New Providence, for the space of six months, commencing with March 1824. The remaining part of the memoir, which is now published for the first time, contains a similar account for the succeeding six months.

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3. *An Epitome of Chymical Philosophy; being an extended syllabus of the lectures on that subject, delivered at Dartmouth College; and intended as a text book for students.* By JAMES FREEMAN DANA, M. D. Concord, N. H. pp. 231, 1825. (From the author.)

In No. XVI. of this Journal, we announced the publication of the first part of this highly creditable work. We have now received it complete, and shall review it in our next.

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4. *The Characteristic of Homöopathia.* From Hahnemaun's "Geist der Homöopathischen heil-lehre." By H. B. GRAM, C. M. L. 8vo. New-York, pp. 24, 1825.

Dr. Gram tells us that the theory of Homöopathia is "tending not only to a reformation in theoretical and practical medicine, but threatening to invalidate many of the doctrines, which, at present, are admitted as correct, and propagated as indispensably necessary in the study and practice of medicine." "This new doctrine," he adds, "is already considerably extended in Europe, and the number of its adherents is daily increasing." We are much indebted to Dr. Gram for this information; and if it be really so, we should be happy if some competent person would give us an account of the doctrines of Homöopathia, somewhat more intelligible than that contained in this pamphlet.

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5. *A system of Anatomy for the use of Students of Medicine.* By CASPAR WISTAR, M. D. late Professor of Anatomy in the University of Pennsylvania. Third edition, with notes and additions. By WILLIAM EDMONDS HORNER, M. D. Adjunct Professor of Anatomy in the University of Pennsylvania, &c. Two vols. 8vo. Philadelphia, 1825.

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6. *Observations upon the autumnal fevers of Savannah.* By W. C. DANIELL, M. D. Savannah and New-York, pp. 152. 1826. See Review.

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7. *An inquiry into the nature and treatment of Diabetes, Calculus, and other affections of the urinary organs; with remarks on the importance of attending to the state of the urine in organic diseases of the kidney and bladder: and some practical rules for determining the nature of the disease, from the sensible and chemical properties of that secretion.* By WILLIAM PROUT, M. D. F. R. S. From the second London edition, revised and much enlarged: with notes and additions. By. S. CALHOUN, M. D. &c. Philadelphia, pp. 308. 1826.

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8. *An Exposition of the natural system of the Nerves of the Human Body: with a republication of the papers delivered to the Royal Society, on the subject of the Nerves.* By CHARLES BELL; Professor of Anatomy and Surgery to the Royal College of Surgeons, &c. 8vo. Philadelphia, 1825. Reprinted from the English Edition.

9. *An Elementary System of Physiology.* By JOHN BOSTOCK, M. D. F. R. S. L. S. &c. &c. 8vo. Boston. 1825. Reprinted from the English Edition.

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10. *The Lectures of* SIR ASTLEY COOPER, Bart. F. R. S. Surgeon to the King, &c. &c. *on the principles and practice of Surgery, with additional notes and cases.* By FREDERICK TYRRELL, Esq. Surgeon to St. Thomas' Hospital, &c. 2 vols. in one, 8vo. Philadelphia. pp. 355. 1826. Reprinted from the English Edition.

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11. *Anniversary Address on the progress of the Natural Sciences in the United States, delivered before the Lyceum of Natural History of New-York, February* 1826. By JAMES E. DEKAY. New-York. 1826.

The subject of this address is one peculiarly appropriate for an anniversary occasion, and Dr. Dekay has done it considerable justice. He notices the progress of mineralogy, geology, botany, and zoology since the conclusion of the late war with England; taking that period as the era when the mind of our country shook off its vassalage and dependence on foreign authorities, and concludes with a sketch of such travels as have been undertaken by individuals, or under the auspices of the government, with a view of enlarging the boundaries of natural science. Most of the opinions advanced by our author appear founded in truth, and we have noticed but few, either of his commendations or censures, that we are desirous of altering.

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12. *Manual of Mineralogy and Geology: designed for the use of schools, and for persons attending lectures on these subjects, as also a convenient pocket-companion for travellers in the United States of America.* By EBENEZER EMMONS, M. D. Adopted as a text book in the Rensselaer School. 12mo. pp. 229. Albany, 1826. (From the author.)

This work has been compiled with much care from the voluminous treatises on mineralogy, of Professor Cleaveland, Mohs, Brooke, and others on the same subject, and contains also notices of recent discoveries in this interesting branch of science. An outline of geology is also given, illustrated by references to North American localities. This manual is not intended to supersede the necessity of larger and more extended works; but as a text book for students, and a pocket-companion for travellers. Dr. Emmons' reputation as a mineralogist, is a sufficient guarantee for the accuracy with which it has been executed.

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13. *Académie Royale des Sciences.* Rapport fait dans les séances des 26 Septembre, 7 et 21 Novembre 1825, sur un memoire de M. COSTA, agent pour titre; *Considérations generales sur l'epidemie qui ravagea Barcelone en* 1821, *et sur les mesures que notre gouvernement avait prises pour nous en garantir.* 4to, pp. 57. Paris, 1826.

We are indebted for a copy of this interesting report on the Barcelona fever, to our friend Dr. Dekay, of this city. We shall give some account of it in our next.

14. "*Hygiene Militaire, a l'usage des armées de terre:* Par le Chevalier J. R. L. DE KIRCKHOFF, M. D. &c. &c." Seconde edition, revue et augmentée. 8vo. Anvers, 1823. pp. 245.

A systematic work, having for its special object the preservation of the health of armies, has long been a desideratum, and is worthy of a favourable reception; since it is well established by experience, that more soldiers fall victims to disease than to arms.

The life of a soldier, independent of the dangers of battle, is one of privations and fatigues. He is exposed to the vicissitudes of seasons and of climates, and to morbific causes that frequently effect dreadful ravages on the constitutions even of the most robust. The multitude of maladies that we observe among soldiers should not astonish us, great as it is. Some are inevitable, particularly in time of war; but they are most usually the work of the men themselves. For this reason, it is a subject for serious consideration, whether governments should not make it the duty of the officers, as well as the surgeons of the army, to know intimately the great outlines of medical economy, and the truths of medical experience, which might save the troops from useless exposures and privations, often the causes of the most serious diseases and disasters of armies.

We are persuaded that many valuable lives might be yearly saved, more particularly during war, if the youth who enter our service as officers, were obliged to be examined minutely on the laws of health. It might be of immense advantage were a medical professorship attached to each military school, for the purpose of instructing officers in the general principles for the preservation of the health of the soldiery. To enlarged and philosophic minds, war is not the mere destruction of life and property, but a science; and such minds apply each species of learning in its proper sphere, and under proper circumstances. In the army almost every branch of science is occasionally in requisition, and should be ever ready for application.

The soldier enlists, as it were, into the family of the government, becomes its child, and adopts its feelings. He is willing, and frequently does sacrifice to it his health, and even his life; and it becomes the imperious duty of government to cherish the one, and to preserve the other.

The author of the work before us was for many years chief physician to the army of the Netherlands, and in such capacity, accompanied the memorable expedition to Moscow, under Napoleon Bonaparte in 1812–13. Devotedly attached to the military, he has published his "Hygiène Militaire," with a view of benefiting the soldiery, and ennobling the army. We have seen no book so full of judicious advice and sound principle, as applied to military life. It deserves a serious perusal by every officer in our army. Fortunately the genius of our country is opposed to standing armies; but, should we ever again be forced to arms, a translation of Dr. Kirckhoff's book would be highly valuable.

The author has divided his work into nine chapters, viz.:

1. Recruiting.
2. Medical police of armies.
3. Atmospheric air considered in its connexion with the health of armies.
4. Food.
5. Action and repose—sleep and watchfulness.
6. Clothing.
7. Manners and discipline.
8. Influence of moral affections.
9. Cleanliness.

We find many new and valuable observations in each of these divisions. There is a strain of pure morality pervading the work, and the author's chief aim seems to be the formation of an army of healthy, useful, and honest men, upon the well-known principle that a virtuous man makes the best soldier, or, as Zenophon says, "In battle, those who fear the gods most, fear men the least."

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15. *Litterarische Annalen der gesammten Heilkunde, herausgegeben von* Dr. JUSTUS F. C. HECKER. Professor de Heilkunde an der Universitat Berlin, &c. Four numbers—for July, August, September, and October, 1825. In exchange.

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16. *De corporum heterogeneorum in plantis animalibusque genesi.* Dissertatio inauguralis. Auctor JOSEPHUS HERMANNUS SCHMIDT. 4to. Berolini. pp. 48. 1825.

We are indebted to Professor Hecker of Berlin for a copy of this learned and elaborate dissertation.

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17. *Compte rendu des travaux de la Societe Linneene de Paris, pendant L'annee,* 1825. 8vo. Paris, pp. 135. 1826.

The annual report of this distinguished society contains an account of the labours of its associates during the year 1825, in the various departments of natural science. Under the head of zoology we are pleased to see respectful mention made of the excellent paper of Dr. Pascalis on the small-pox, which was published in No. XIV. of this Journal.

INTELLIGENCE.

MEDICAL SOCIETY OF THE STATE OF NEW-YORK.

The prize for the best Dissertation on *Hooping Cough* was adjudged to D. L. M. PEIXOTTO, M. D., one of the Editors of this Journal.

The following Prize questions are offered by the Medical Society of the State, for the year 1827, viz.

1. The nature and proper classification of the disease commonly called *Salt Rheum,* its causes, and the best mode of treating it.
2. The history, causes, and treatment of *Scrofula.*

The dissertations are to be forwarded to the secretary of the society, (Dr. Platt Williams,) at Albany, on or before the 1st of December, 1826. They are to be accompanied with a sealed paper, containing the name of the author, and this sealed paper, as well as the dissertation, to be endorsed with the same motto, in order that the name of the successful author alone may be ascertained.

Medical commencement in the University of the State of New-York.—At the annual commencement of the College of Physicians and Surgeons of the city of New-York, held on Tuesday the 4th of April, 1826, the degree of Doctor of Medicine was conferred on the following gentlemen, to whom the Regents had granted said honour.

MASSACHUSETTS.

Reuben Knox—On Hepatitis.

CONNECTICUT.

George E. Palmer—On Neuralgia.

NEW-YORK.

Daniel C. Ambler—On the Infantile Remittent Fever.
James Andrews—On Dysentery.
William James Barry—On Hydrocele.
William H. Boyd, A. B.—On Peritoneal Inflammation.
John Binsse—On Stricture of the Urethra.
Amos H. Brown—On Chronic Inflammation.
Henry G. Dunnel—On Sympathy.
James M. Gardiner—On the Diagnosis of Abdominal diseases.
John M. Glover, A. M.—On Aneurism.
William Gregg—On Labour.
John F. Gray—On the buffy coat of the blood.
Henry E. Griffith—On the conjunctival Ophthalmia.
Lewis Hallock—On the Functions of the Skin.
Josiah D. Harris, A. M.—On Puerperal Fever.
Stephen R. Harris—On Aneurisms.
William M. Ireland—On Phlegmasia Dolens.
Benjamin F. Joslin, A. M.—On Radiant Caloric.
Benjamin C. Leveridge—On Inflammation.
Samuel Marshall—On Croup.
Matthew M'Ilwaine—On Inflammation.
Walter C. Palmer—On Epidemic Catarrh.
James C. Paul—On Animal Heat.
William Power, A. M.—On the Cow Pox.
Mark Stephenson—On the structure and functions of the Skin.
Alfred Wagstaff A. B.—On the Prostate Gland.

NEW-JERSEY.

Edward Taylor, jun.—On Lumbar Abscess.

PENNSYLVANIA.

James Fitzpatrick—On Emansio Mensium.

DISTRICT OF COLUMBIA.

Richard S. Briscoe, jun.—On Hepatitis

NORTH CAROLINA.

Griffith J. Mac Ree—On Yellow Fever.

SOUTH CAROLINA.

William R. A. Boulware—On Inflammation of the Veins.

GEORGIA.

Charles Sturges—On the Topography, Climate, and diseases of Burk County, (Georgia.)

WEST INDIES.

Isaac A. De Lima—On Fractures.

NEW-YORK HOSPITAL.

At the annual election held June 6, 1826, the following gentlemen were elected Physicians and Surgeons for the ensuing year, viz.:

Physicians.	*Surgeons.*
John Watts, jun., M. D.	Valentine Mott, M. D.
Thomas Cock, M. D.	Alexander H. Stevens, M. D.
Samuel W. Moore, M. D.	John C. Cheeseman, M. D.
Stephen D. Brown, M. D.	J. Kearny Rodgers, M. D.

Consulting Physicians.

William Hamersley, M. D.
David Hosack, M. D.

Consulting Surgeon.

Wright Post, M. D.

A CARD.

To the Editors of the New-York Medical and Physical Journal.

GENTLEMEN,

I conceive it my duty to you, as well as to myself, to correct a statement made by Dr. David L. Rogers in relation to the case of "O. Platt," published in the last number of your Journal.

He there, without even alluding to the attending surgeon, from whom he received daily instructions, touching the case, mentions it as one which "came under his care, while resident surgeon of the New-York Hospital;" thus inducing the belief that *he* treated the patient, and that the merit of the plan, if any, was *his*.

The truth is, that I prescribed daily for the man, and that Dr. Rogers, as resident physician, received directions from me respecting the treatment to be pursued in the intervals between my visits.

The case was an interesting one to me, and to its publication in a proper way I would have had no objections, but would cheerfully have given my permission. I cannot, however, allow its being thus filched from me, and palmed off on the public as the property of another.

I am, gentlemen, very respectfully yours,

J. KEARNY RODGERS.

June 22d, 1826, 14 Courtlandt-Street.

Dr. J. Kearny Rodgers will in November commence his course of Anatomical Lectures—to continue during the session of the Medical College.

July 10th, 1826. 14 Courtlandt-Street.

UNIVERSITY OF THE STATE OF NEW-YORK.

College of Physicians and Surgeons of the Western District at Fairfield, Herkimer County.—The lectures at this institution will commence on the first Tuesday in October next, and continue during the space of sixteen weeks.

JOSEPH WHITE, M. D.—On Surgery.

WESTEL WILLOUGHBY, M. D.—On Obstetrics.

JAMES HADLEY, M. D.—On Chemistry and Materia Medica.

T. ROMEYN BECK, M. D.—On the Practice of Physic and Medical Jurisprudence.

JAMES M'NAUGHTON, M. D.—On Anatomy and Physiology.

Fee for the whole course of lectures $54. Board may be had from $1 25 to $1 75 per week.

By Order, JAMES HADLEY, Registrar.

ERRATA IN No. XVII.

31, line one, for *representative* read *representation.*

44, line seventh, for *mortality*, read *mourning.*

In the list of members of the State Medical Society, Dr. John H. Steel, and Dr. Samuel Freeman are omitted.

UNIVERSITY OF THE STATE OF NEW-YORK.

College of Physicians and Surgeons of the city of New-York. —We are happy to have it in our power to announce that the affairs of this institution are finally adjusted. All the vacancies in the professorial chairs have been filled, and the regular courses of lectures will be delivered the ensuing winter, to commence at the usual period. The appointments recently made by the honourable the Regents of the University are the following, viz. :

JOHN WATTS, M. D., *President.*
JONAS PLATT, Esq., *Vice President.*
NICOLL H. DERING, M. D., *Registrar.*

JOHN AUGUSTINE SMITH, M. D.
Professor of Anatomy and Physiology.

ALEXANDER H. STEVENS, M. D.
Professor of Surgery.

JOSEPH M. SMITH, M. D.
Professor of the Theory and Practice of Physic and Clinical Medicine.

JOHN B. BECK, M. D.
Professor of Materia Medica and Botany.

EDWARD DELAFIELD, M. D.
Professor of Obstetrics and the Diseases of Women and Children.

JAMES FREEMAN DANA, M. D.
Professor of Chemistry.